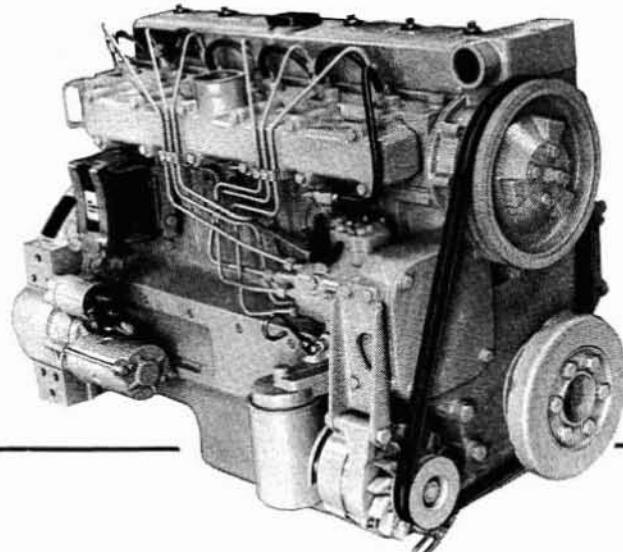


Onan

Parts Manual

**L634D-I
L634D-P
Engine
Diesel**



934-0251

7-87

**(SPEC A-C — INDUSTRIAL ENGINE)
(SPEC A AND C — POWER UNIT)**

Replaces

5-86 (Spec A-C — Industrial Engine)
(Spec A — Power Unit)

Printed in U.S.A.

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INTRODUCTION

To assist your Onan Dealer in giving you prompt and efficient replacement parts service, a Sales Option Code plate is part of your Onan nameplate and lists Sales Option Code numbers that identify factory installed parts unique to your engine. Corresponding Code Numbers are listed at the top of each parts group and are used to determine correct replacement parts. For early built Industrial Engines that do not have the rocker cover mounted nameplate and early built Power Units that do not have the radiator shroud mounted nameplate, refer to the table at the rear of this manual.

This parts manual is divided into two sections each of which is controlled by a separate nameplate. The Industrial Engine Section includes service replacement parts for Sales Option Code numbers listed on the rocker cover nameplate. The Power Unit Section includes service replacement parts for Sales Option Code numbers listed on the radiator shroud nameplate. Only the Power Units have the second shroud mounted nameplate. When ordering replacement parts for a Power Unit the model and specification number from both nameplates must be provided.

The diagonal line (/) in the model and specification number separates engine characteristics from the specification number and letter. The specification letter on each nameplate may advance (A to B, B to C, etc.) independently of each other with major manufacturing changes. This letter designation, when used in the Part Description, also applies when ordering replacement parts. Left (non-accessory) and right (accessory) sides are determined by facing the rear or drive end (Flywheel) of the engine.

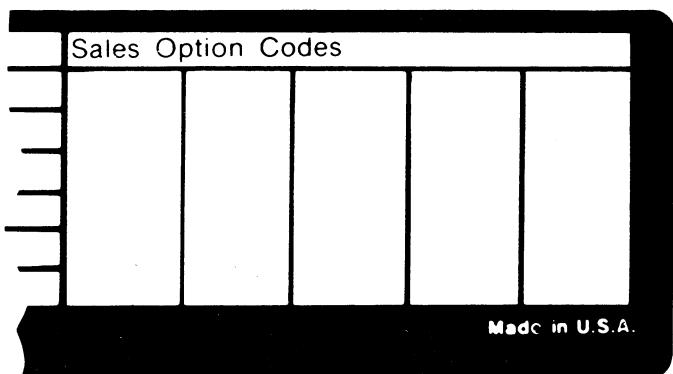
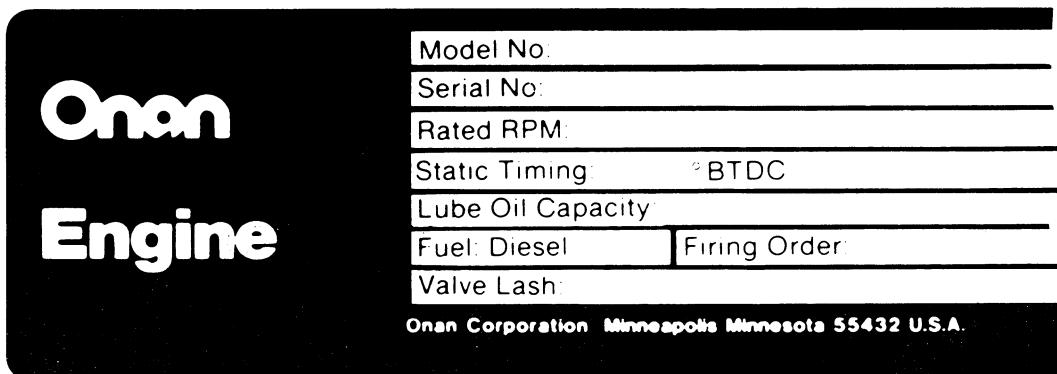
Listed below are Sales Option Code Modifier numbers that may appear on your Onan Nameplate. These code numbers have no direct service replaceable parts and only modify another related Sales Option Code number by identifying a distinctive feature(s). Parts that differ as a result of the modifier are identified in the parts description for that part.

- 15AJ (Fuel System for #2 Diesel Fuel)
- 15AK (Fuel System for Jet A or JP-5 Fuel)
- 15AL (Fuel System for JP-4 Fuel)
- 15AU (Bosch Injection Pump in place of Stanadyne Injection Pump)
- 23CB (No Belts)
- 23CC (No Belts or Alternator Pulley)
- 23CD (Double Pulley and Belts to Replace Single)
- 23CE (Single Pulley and Belts to Replace Double)
- 31AG (12 Volt System)
- 31AH (24 Volt System)
- 31AJ (32 Volt System)
- 35AJ (Fuel Solenoid - Energized to Run)
- 35AK (Fuel Solenoid - Energized to Run, Manual Override)
- 35AL (Fuel Solenoid - Energized to Shut Off, Manual Override)
- 45AA (Auxiliary Gear Drive)
- 45AT (Two Groove Crankshaft Pulley to Replace Single)
- 47 (Literature and Shipping Hardware)
 - (Alpha letters after the number 47 are variable depending on model)
 - (Sales Code 47 is not a modifier, however, there are no service replaceable parts)

INDUSTRIAL ENGINE SECTION

This section contains replacement parts for the Industrial Engine as listed by Sales Option Code number on the rocker cover nameplate.

MODEL IDENTIFICATION LABEL



For handy reference, insert your rocker cover nameplate and Sales Option Code information in the spaces above.

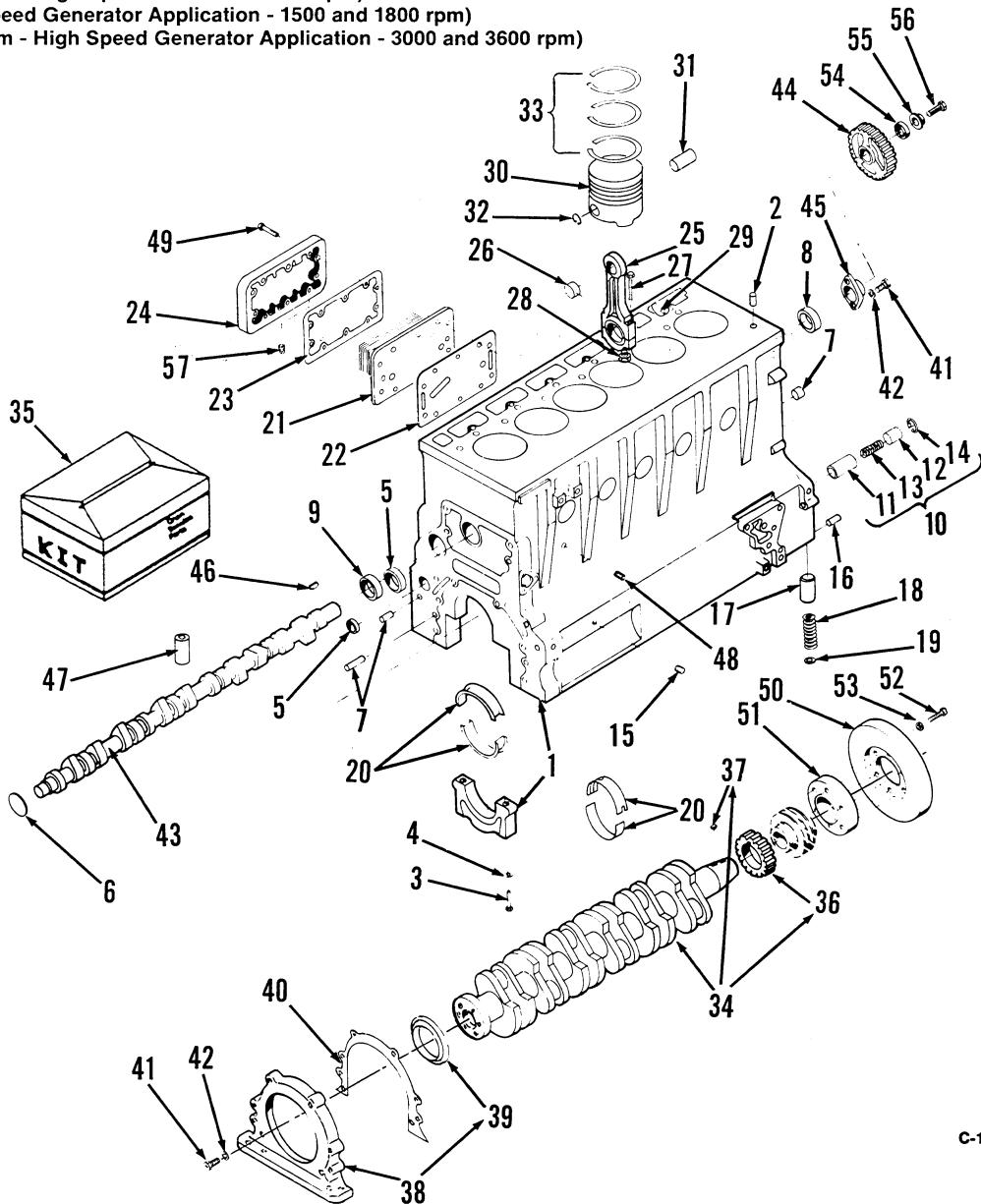
CYLINDER BLOCK

Code 11AA (Low Speed Variable to 2600 rpm)

Code 11AB (Premium - High Speed Variable to 3600 rpm)

Code 11AC (Low Speed Generator Application - 1500 and 1800 rpm)

Code 11AE (Premium - High Speed Generator Application - 3000 and 3600 rpm)



C-1064-2

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	BLOCK ASSEMBLY, CYLINDER (Includes Parts Marked *)		Code 11AA and 11AC Spec A	2	110-2978	2	*Pin, Cylinder Head Alignment
			Code 11AB, 11AE Spec A	3	720-1801	14	*Screw, Cap - Hex Head - Special
				4	740-1801	14	*Washer, Flat - Special
				5	PLUG, CUP		
110-3433	1	1	Vert. Down Oil Filter	517-0141		6	*50.8 MM Stainless Steel
110-3435	1	1	Horizontal Oil Filter	517-0144		2	*12.7 MM Steel
110-3437	1	1	Remote Oil Filter	517-0146		1	*31.75 MM Stainless Steel
110-3292	1	1	Spec B	517-0250		1	54.37 MM Stainless Steel (Oversize)
				6	517-0140	1	*Plug, Welch (57.15 MM) - Steel
110-3434	1	1	Vert. Down Oil Filter	7	PIN, ALIGNMENT		
110-3436	1	1	Horizontal Oil Filter	775-0074		2	* 8 MM x 20 MM
110-3438	1	1	Remote Oil Filter	775-0089		2	*10 MM x 20 MM
110-3293	1	1	Spec B	775-0078		2	* 8 MM x 40 MM

CYLINDER BLOCK

Code 11AA (Low Speed Variable to 2600 rpm)

5100-0711

Code 11AB (Premium - High Speed Variable to 3600 rpm)

5100-0716

Code 11AC (Low Speed Generator Application - 1500 and 1800 rpm)

5100-0720

Code 11AE (Premium - High Speed Generator Application - 3000 and 3600 rpm)

5100-0721

REF.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
8	101-0511	1	*Bearing, Camshaft - Front	30	PISTON AND PIN KIT (Includes Retaining Rings)		
9	101-0471	6	*Bearing, Camshaft - Intermediate and Rear	112-0201	6	Standard	
10	123-1613	1	*Valve Assembly, Pressure Relief (Includes Parts Marked +)	112-0202	6	0.25 MM Oversize	
			- Code 11AB, 11AE	112-0203	6	0.50 MM Oversize	
11	123-1515	1	+Body, Relief Valve	112-0204	6	0.75 MM Oversize	
			- Code 11AB, 11AE	112-0205	6	1.0 MM Oversize	
12	123-1514	1	+Piston, Relief Valve	31	112-0165	6	Pin, Piston
			- Code 11AB, 11AE	32	518-0409	12	Ring, Retaining - Piston Pin
13	123-1508	1	+Spring, Relief Valve	33	RING KIT, PISTON		
			- Code 11AB, 11AE	113-0233	6	Standard	
14	518-0410	1	+Ring, Retaining	113-0234	6	0.25 MM Oversize	
			- Code 11AB, 11AE	113-0235	6	0.50 MM Oversize	
15	PLUG, PIPE			113-0236	6	0.75 MM Oversize	
502-0153	1		*Brass (1/4") Early Models	113-0237	6	1.0 MM Oversize	
505-0274	6		*Steel (1/8")	34	104-1576	1	Crankshaft and Gear (Includes Key)
16	516-2102	1	*Pin, Regulator Valve Spring	35	168-0173	1	Gasket Kit, Lower End
17	123-1514	1	*Piston, Regulator Valve	36	104-1138	1	Gear, Crankshaft
18	123-1511	1	*Spring, Regulator Valve	37	515-0245	1	Key, Woodruff (Special)
19	740-1004	1	*Washer, Flat (M6)	38	101-0713	1	Plate, Rear Seal (Includes Seal)
20	BEARING KIT, MAIN	(Includes Upper and Lower Bearing Half)	Front	39	509-0203	1	Seal, Oil - Rear (Includes Wear Sleeve)
			Standard	40	101-0600	1	Gasket, Rear Seal Plate
	101-0689	1	0.25 MM Undersize	41	718-1037	8	Screw, Cap - Hex Head (M8 x 25 MM)
	101-0690	1	0.50 MM Undersize	42	740-1006	8	Washer, Flat (M8)
	101-0691	1	0.75 MM Undersize	43	105-0512	1	Camshaft
	101-0692	1	Center	44	GEAR, CAMSHAFT		
	101-0681	1	Standard	105-0515	1	Engines Without Front PTO	
	101-0682	1	0.25 MM Undersize	105-0552	1	Engines With Front PTO	
	101-0683	1	0.50 MM Undersize	45	105-0534	1	Retainer, Camshaft
	101-0684	1	0.75 MM Undersize	46	515-0245	1	Key, Camshaft Gear
	101-0685	4	Intermediate (Except Center)	47	115-0275	12	Tappet
	101-0686	4	Standard	48	FITTING (3/8")		
	101-0687	4	0.25 MM Undersize	504-0028	1	Valve, Coolant Drain - Code 11AA, 11AC	
	101-0688	4	0.50 MM Undersize	49	502-0775	1	Plug, Pipe - Code 11AB, 11AE
	101-0685	4	0.75 MM Undersize	725-1057	10	Screw, Socket Head (M8 x 40 MM) - Code 11AB, 11AE	
	101-0686	4	Rear	50	DAMPER, CRANKSHAFT		
	101-0687	4	Standard				Engines Not Used for Generator Application
	101-0688	4	0.25 MM Undersize				- Codes 11AA, 11AB
	101-0689	1	0.50 MM Undersize	104-1193	1	Engines Without Front PTO	
	101-0690	1	0.75 MM Undersize	104-1485	1	Engines With Front PTO	
	101-0691	1	Center				Engines Used for Generator Application
	101-0692	1	Standard				- Code 11AB, 11AE
	101-0677	1	0.25 MM Undersize	104-1485	1	3000 rpm	
	101-0678	1	0.50 MM Undersize	104-1547	1	3600 rpm	
	101-0679	1	0.75 MM Undersize	51	104-1464	1	Adapter, Damper - Engines Not Used for Generator Application (Without Front PTO)
	101-0680	1	Center				
21	102-1022	1	Cooler, Oil - Code 11AB, 11AE	52	720-1807	6	Screw, Cap - Hex Head (Special)
22	102-0973	1	Gasket, Oil Cooler	53	740-1008	6	Washer, Flat (M10)
			- Code 11AB, 11AE	54	510-0140	1	Bearing, Ball - Camshaft
23	102-0975	1	Gasket, Oil Cooler Cover	55	105-0569	1	- Engines With Front PTO
			- Code 11AB, 11AE	56	720-1039	1	Retainer, Camshaft Bearing
24	102-1005	1	Cover, Oil Cooler	57	504-0028	1	- Engines With Front PTO
			- Code 11AB, 11AE				
25	114-0313	6	Rod, Connecting (Includes Finished Bearing, Bolts and Nuts)				
26	114-0316	6	Bushing, Connecting Rod (Semi Finished)	52	720-1807	6	Screw, Cap - Hex Head (Special)
27	114-0315	12	Bolt, Connecting Rod	53	740-1008	6	Washer, Flat (M10)
28	114-0318	12	Nut, Connecting Rod	54	510-0140	1	Bearing, Ball - Camshaft
29	BEARING, CONNECTING ROD (Half)			55	105-0569	1	- Engines With Front PTO
	114-0319	12	Standard	56	720-1039	1	Retainer, Camshaft Bearing
	114-0319-01	12	0.25 MM Undersize	57	504-0028	1	- Engines With Front PTO
	114-0319-02	12	0.50 MM Undersize				
	114-0319-03	12	0.75 MM Undersize				

* - Parts Included in Cylinder Block Assembly.

+ - Parts Included in 123-1613 Pressure Relief Valve Assembly.

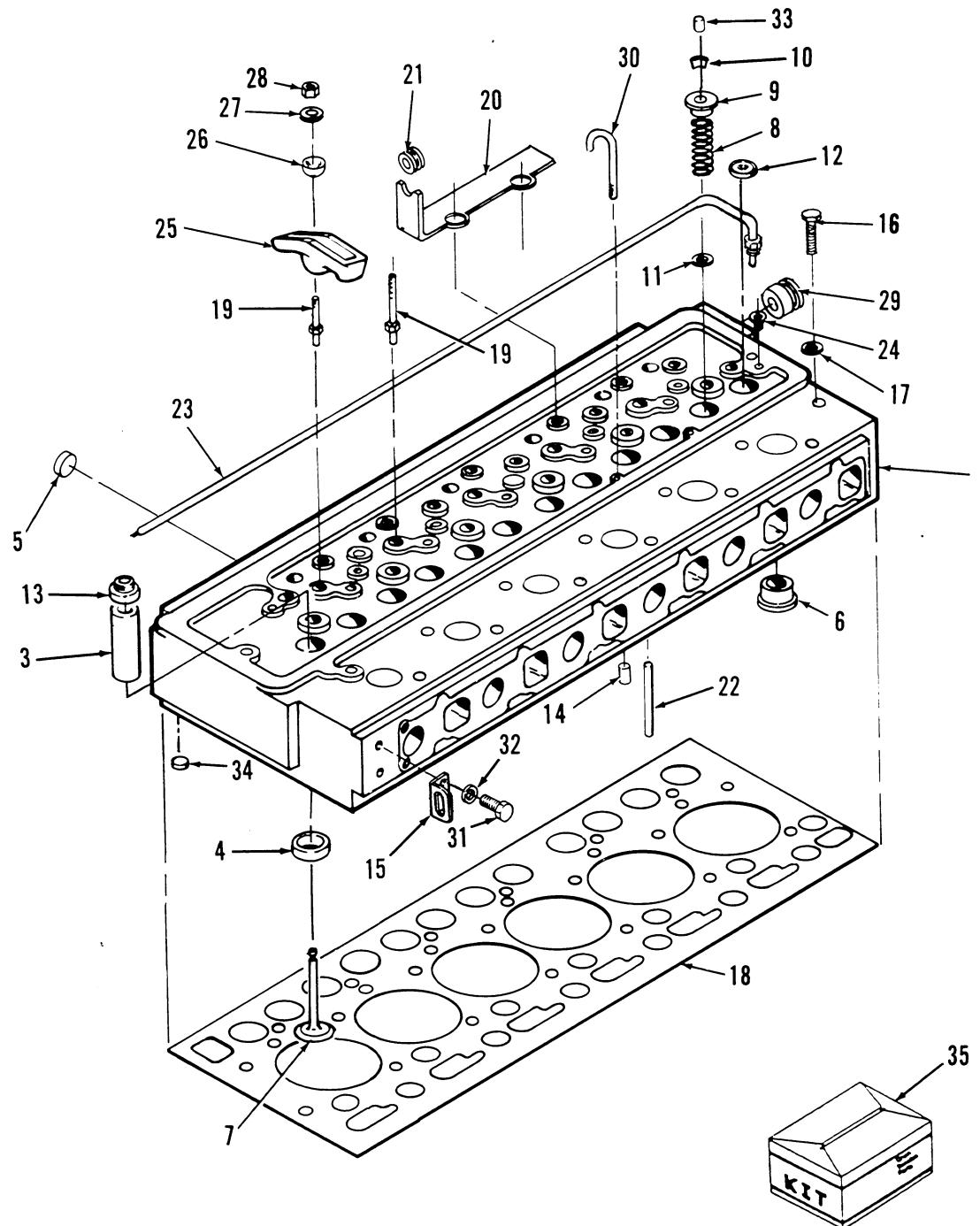
CYLINDER HEAD

Code 11AA (Low Speed Variable to 2600 rpm)

Code 11AB (Premium - High Speed Variable to 3600 rpm)

Code 11AC (Low Speed Generator Application - 1500 and 1800 rpm)

Code 11AE (Premium - High Speed Generator Application - 3000 and 3600 rpm)



CYLINDER HEAD

Code 11AA (Low Speed Variable to 2600 rpm)	5100-0009
Code 11AB (Premium - High Speed Variable to 3600 rpm)	5100-0043
Code 11AC (Low Speed Generator Application - 1500 and 1800 rpm)	5100-0095
Code 11AE (Premium - High Speed Generator Application - 3000 and 3600 rpm)	5100-0725
	5100-0790
	5100-0870
	5100-0894
	5100-0895
	5100-0919

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	110-3200	1	Head Assembly, Cylinder (Includes Guides, Seats, Cup Plugs, Breather Tubes, Valves, Springs, Water Pump Adapter, Retainers, Collets, Wear Plates, Sleeves, Seals and Spacers)	9	110-3015	12	Retainer, Valve Spring
				10	110-2752	24	Collet, Valve Lock
				11	PLATE, VALVE SPRING WEAR		
				110-2991	12	Spec A and B	
				110-2991	6	Begin Spec C (Exhaust)	
				12	110-3432	6	Spacer, Valve Spring (Intake) Begin Spec C
2	110-3284	1	Head, Cylinder (Includes Seats, Spacers, Sleeves, Cup Plugs, Water Pump Adapter and Guides)	13	110-3228	12	Seal Assembly, Valve Stem
				14	110-2979	6	Sleeve, Sealing
				15	403-1875	2	Bracket, Lifting - Engines Without Code 19AB, 23BM
3	GUIDE, VALVE (Semi Finished)			16	720-1802	26	Screw, Cap - Hex Head (M12 x 130 MM)
	110-3495	6	Intake (Std.)	17	740-1801	20	Washer, Flat (M12)
	110-3496	6	Exhaust (Std.)	18	110-3026	1	Gasket, Cylinder Head
4	SEAT, VALVE		Intake	19	STUD, ROCKER ARM		
	110-2839	6	Spec A and B (Std.) Not Original Equipment	115-0204	6	Short	
			Begin Spec C - Code 11AB, 11AE (Not Original Equipment for Code 11AA, 11AC)	115-0270	6	Long	
	110-3226-01	6	Standard	20	115-0313	3	Guide, Push Rod
	110-3226-02	6	.25 MM Oversize	21	508-0228	3	Grommet
	110-3226-03	6	.50 MM Oversize	22	115-0253	12	Pushrod
			Exhaust	23	120-0920	1	Tube, Rocker Arm Oil
	110-2781-01	6	Standard	24	502-0003	1	Connector, Inverted Male
	110-2781-02	6	.25 MM Oversize	25	115-0316	12	Arm, Rocker
	110-2781-03	6	.50 MM Oversize	26	115-0202	12	Ball, Rocker Arm
5	PLUG, CUP			27	526-2119	12	Washer, Flat
	517-0142	11	38.1 MM	28	115-0315	12	Locknut, Rocker Arm
	517-0146	4	31.75 MM	29	ADAPTER, WATER PUMP		
	517-0162	6	19.05 MM	110-3045	1	Standard	
6	PLUG, HOT (Swirl)		Spec A and B	110-3490	1	0.5 MM Oversize	
			Code 11AA, 11AB, 11AE	30	123-1536	2	Tube, Breather
	110-3039	6	Code 11AC	31	718-1053	4	Screw, Cap - Hex Head (M10 x 20 MM) Engines Without Code 23BM
	110-3137	6	Begin Spec C	32	740-1008	4	Washer, Flat (M10) Engines Without Code 23BM
	110-3137	6	Code 11AA, 11AC	33	110-3245	12	Cap, Valve Stem (Not Used on Some Early Models)
	110-3039	6	Code 11AB, 11AE	34	517-0167	1	Plug, Cup (22.6 MM) Code 11AA, 11AC
7	VALVE			35	168-0160	1	Gasket Kit, Valve Grind
	110-3066	6	Intake				
	110-2840	6	Exhaust				
8	110-3300	12	Spring, Valve				

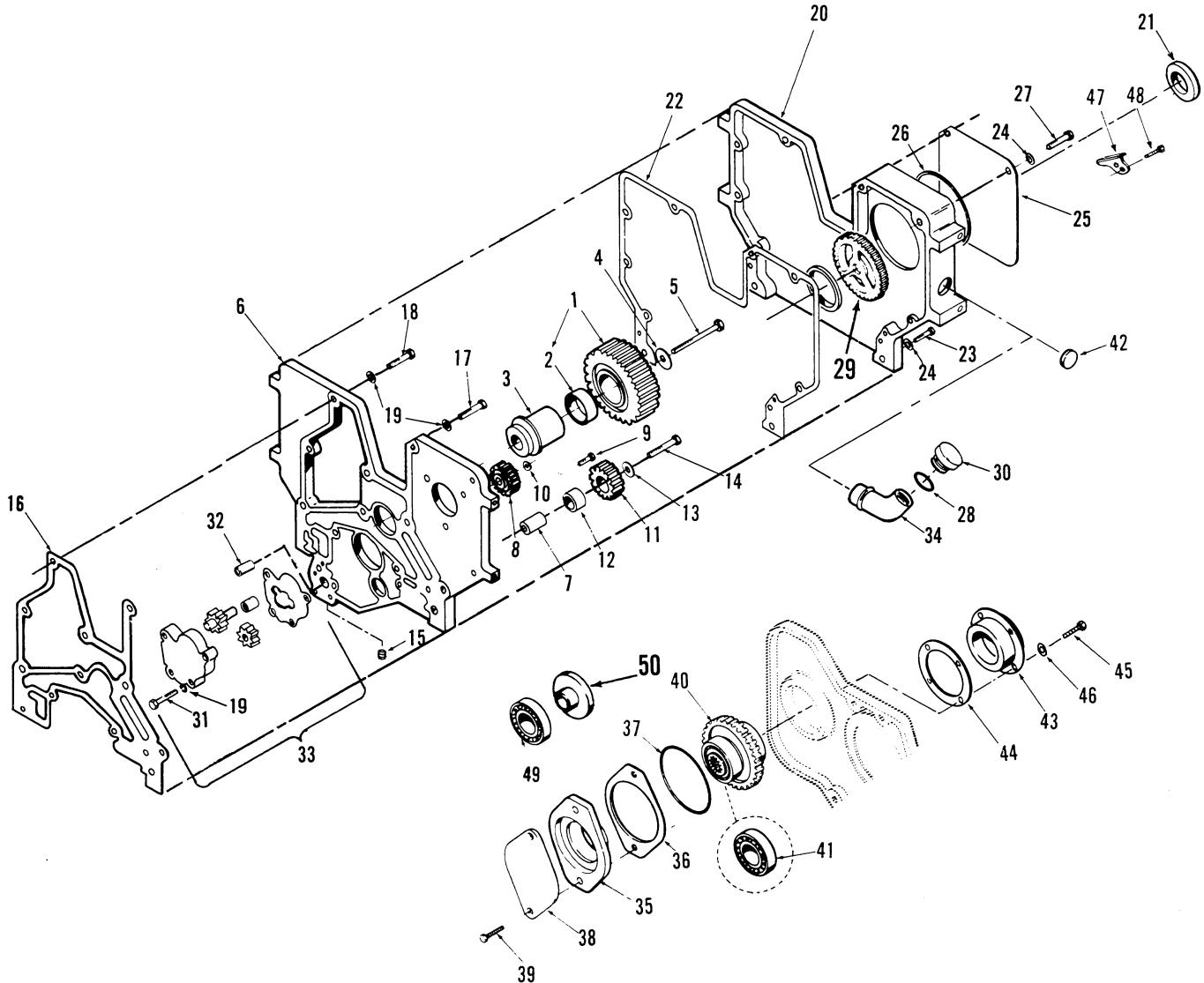
GEARCASE

Code 11AA (Low Speed Variable to 2600 rpm)

Code 11AB (Premium - High Speed Variable to 3600 rpm)

Code 11AC (Low Speed Generator Application - 1500 and 1800 rpm)

Code 11AE (Premium - High Speed Generator Application - 3000 and 3600 rpm)



GEARCASE

Code 11AA (Low Speed Variable to 2600 rpm)

Code 11AB (Premium - High Speed Variable to 3600 rpm)

Code 11AC (Low Speed Generator Application - 1500 and 1800 rpm)

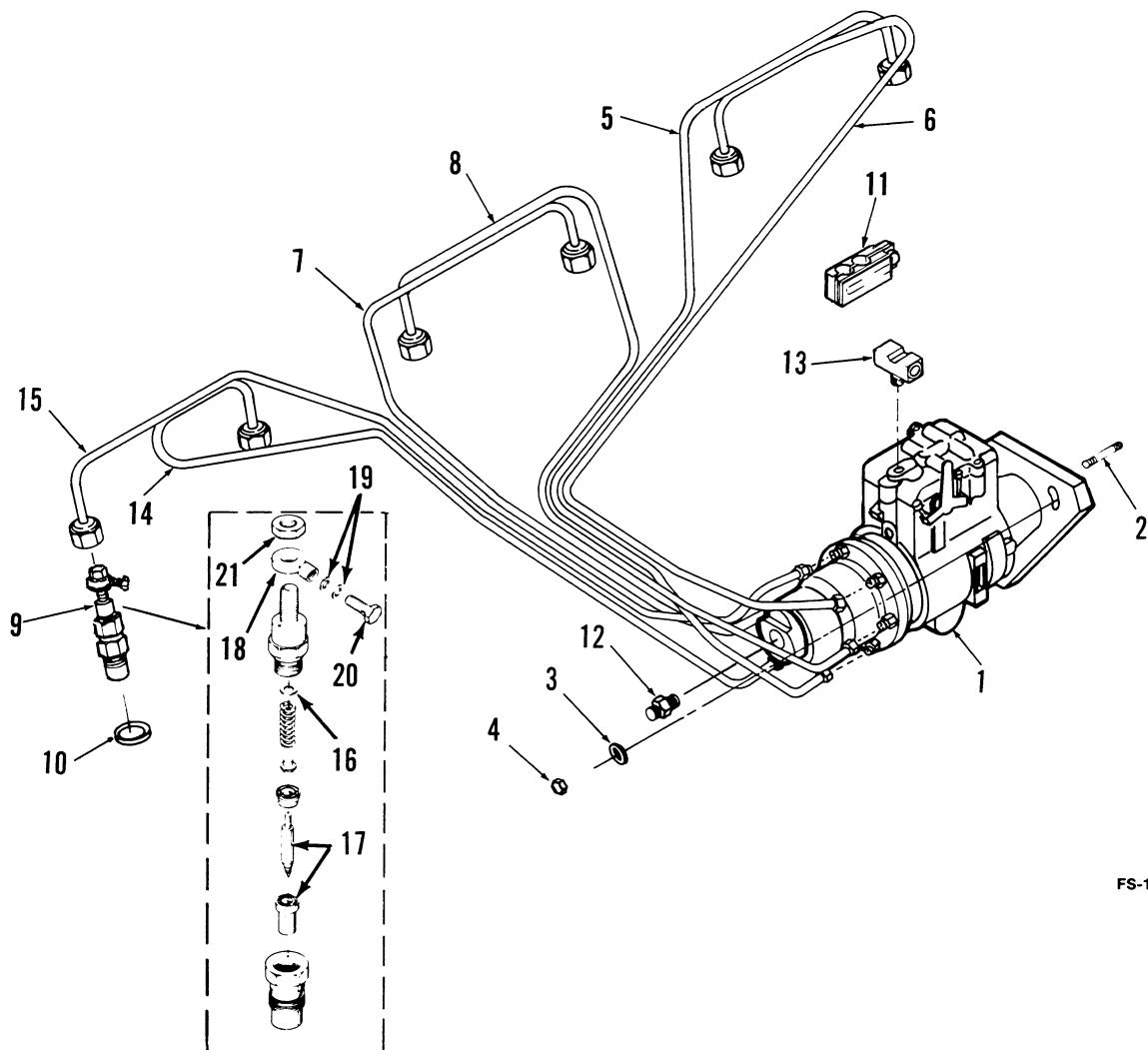
Code 11AE (Premium - High Speed Generator Application - 3000 and 3600 rpm)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	GEAR, IDLER 105-0513	1	Engines Without Front PTO (Includes Finished Bearing)	23	SCREW, CAP - HEX HEAD 718-1046	2	M8 x 70 MM
	105-0555	1	Engines With Front PTO		718-1043	5	M8 x 55 MM
2	105-0519	1	Bearing, Idler Gear (Semi Finished) - Engines Without Front PTO		718-1085	4	M12 x 85 MM (Engines Without Code 41AA, 41AB and 41AH)
3	SHAFT, IDLER GEAR 105-0508	1	Engines Without Front PTO	24	WASHER, FLAT 740-1006	4	M8
	105-0572	1	Engines With Front PTO		740-1010	4	M12
4	526-2127	1	Washer, Flat (M10) - Engines Without Front PTO	25	103-0735	1	Cover, Injection Pump Gear
5	718-1064	1	Screw, Cap - Hex Head (M10 x 75 MM)	26	509-0263	1	Seal, O-Ring
6	BACKPLATE, GEARCASE 103-0600	1	Engines Without Front PTO Spec A	27	SCREW, CAP - HEX HEAD 718-1048	1	M8 x 80 MM
	103-0716	1	Begin Spec B		718-1044	2	M8 x 60 MM
	103-0725	1	Engines With Front PTO		718-1036	1	M8 x 20 MM
7	120-0983	1	Shaft, Oil Pump Idler Gear	28	509-0142	1	Seal, O-Ring - Oil Fill Cap - Engines With Code 17AM
8	120-0885	1	Gear, Oil Pump Drive	29	147-0427	1	Gear, Injection Pump
9	718-1035	1	Screw, Cap - Hex Head (M8 x 16 MM)	30	123-1647	1	Cap - Oil Fill - Engines With Code 17AM
10	526-2106	1	Washer, Flat	31	718-1043	2	Screw, Cap - Hex Head (M8 x 55 MM)
11	120-1063	1	Gear, Oil Pump Idler (Includes Finished Bearing)	32	120-0979	1	Bearing, Oil Pump Drive Shaft
12	120-1041	1	Bearing, Oil Pump Idler Gear (Semi Finished)	33	120-1014	1	Pump Kit, Oil (Includes Drive Shaft Bearing)
13	526-2107	1	Washer, Flat	34	123-1558	1	Tube, Oil Fill - Engines With Code 17AM
14	718-1035	1	Screw, Cap - Hex Head (M8 x 16 MM)	35	121-0038	1	Adapter, Hyd. Pump - Engines With Front PTO
15	725-1802	1	Screw, Hex Socket Set (M16 x 16 MM)	36	121-0039	1	Gasket, Adapter - Engines With Front PTO
16	GASKET, GEARCASE BACKPLATE 103-0612	1	Spec A	37	509-0175	1	Seal, O-Ring - Engines With Front PTO
	103-0733	1	Begin Spec B	38	121-0040	1	Cover, Adapter - Engines With Front PTO
17	SCREW, CAP - HEX HEAD 718-1037	1	M8 x 25 MM	39	718-1075	2	Screw, Cap - Hex Head (M12 x 35 MM) - Engines With Front PTO
	718-1039	1	M8 x 35 MM	40	105-0571	1	Gear Assembly (Includes Bearings) Engines With Front PTO
18	725-1801	2	Screw, Low Socket Head Cap (M8 x 16 MM)	41	510-0141	2	Bearing, Gear - Engines With Front PTO
19	740-1006	7	Washer, Flat (M8)	42	517-0188	1	Plug, Cap
20	GEARCASE (Includes Oil Seal)		Engines Without Front PTO Without Side Oil Fill	43	101-0710	1	Support, Camshaft Bearing - Engines With Front PTO
	103-0739	1	Spec A	44	101-0711	1	Gasket, Support - Engines With Front PTO
	103-0744	1	Begin Spec B	45	718-1037	4	Screw, Cap - Hex Head (M8 x 25 MM) Engines With Front PTO
	103-0740	1	With Side Oil Fill (Includes Oil Fill Tube)	46	740-1006	4	Washer, Flat (M8) Engines With Front PTO
	103-0746	1	Spec A	47	103-0750	1	Plate, Timing (Use Began During Spec B) Engines Without Code 23BK
	103-0745	1	Begin Spec B	48	815-0578	2	Screw, Cap - Hex Head (M6 x 12.5 MM) Use Began During Spec B - Engines Without Code 23BK
21	509-0191	1	Engines With Front PTO	49	510-0139	1	Bearing, Idler Gear - Engines With Front PTO
22	GASKET, GEARCASE 103-0614	1	Seal, Oil (Includes Wear Sleeve)	50	105-0556	1	Retainer, Idler Gear - Engines With Front PTO
	103-0731	1	Engines Without Front PTO				
	103-0723	1	Spec A				
			Begin Spec B				
			Engines With Front PTO				

FUEL INJECTION

Code 13AA (2600 rpm Variable)
Code 13AB (3600 rpm Variable)
Code 13AC (1800 rpm Fixed)
Code 13AD (3000 rpm Fixed)
Code 13AE (1500 rpm Fixed)
Code 13AF (3600 rpm Variable)
Code 13AG (3600 rpm Variable)

Code 13AH (3000 rpm Variable)
Code 13AJ (2800 rpm Variable)
Code 13AK (2400 rpm Variable)
Code 13AL (2200 rpm Variable)
Code 13AM (2000 rpm Variable)
Code 13AN (3600 rpm Variable)
Code 13AP (3600 rpm Fixed)



FS-1566

FUEL INJECTION

Code 13AA (2600 rpm Variable)
 Code 13AB (3600 rpm Variable)
 Code 13AC (1800 rpm Fixed)
 Code 13AD (3000 rpm Fixed)
 Code 13AE (1500 rpm Fixed)
 Code 13AF (3600 rpm Variable)
 Code 13AG (3600 rpm Variable)

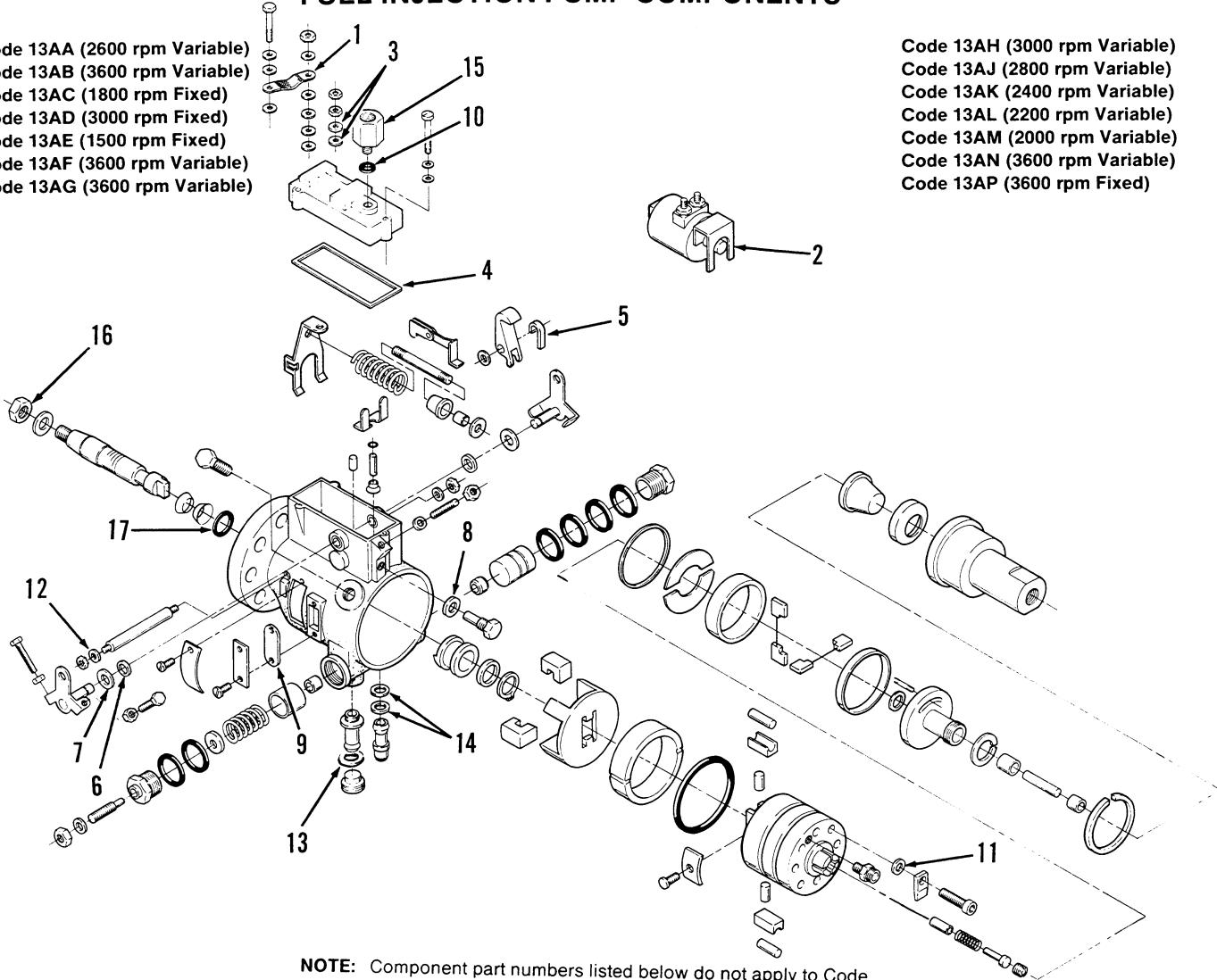
Code 13AH (3000 rpm Variable)
 Code 13AJ (2800 rpm Variable)
 Code 13AK (2400 rpm Variable)
 Code 13AL (2200 rpm Variable)
 Code 13AM (2000 rpm Variable)
 Code 13AN (3600 rpm Variable)
 Code 13AP (3600 rpm Fixed)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	PUMP, FUEL INJECTION (See Separate Group for Components)			12	502-0733	1	Connector
			Code 13AA, 13AK	13	502-0057	1	Tee, Pipe - Special
			12 Volt Pump	14	LINE, FUEL INJECTION (No. 5)		
147-0464-03	1		Jet A Fuel Not Required	149-1769	1		Spec A
147-0464-10	1		Jet A Fuel Required	147-0670	1		Begin Spec B
147-0464-19	1		24 Volt Pump (Jet A Fuel Required)	15	LINE, FUEL INJECTION (No. 6)		
			Code 13AB	149-1770	1		Spec A
147-0464-09	1		12 Volt Pump	147-0671	1		Begin Spec B
147-0464-12	1		24 Volt Pump	16	WASHER, INJECTION NOZZLE SHIM		
147-0464-05	1		Code 13AC	147-0617	As Req.	0.80 MM	
147-0464-08	1		Code 13AD, 13AP	147-0618	As Req.	0.84 MM	
147-0464-06	1		Code 13AE	147-0619	As Req.	0.88 MM	
147-0464-12	1		Code 13AF, 13AG (24 Volt)	147-0620	As Req.	0.92 MM	
			Code 13AH	147-0621	As Req.	0.96 MM	
			Spec A and B	147-0622	As Req.	1.00 MM	
147-0464-02	1		Begin Spec C	147-0623	As Req.	1.04 MM	
147-0464-02	1		Code 13AJ	147-0624	As Req.	1.08 MM	
147-0464-04	1		Code 13AL, 13AM	147-0625	As Req.	1.12 MM	
147-0464-07	1		Code 13AN	147-0626	As Req.	1.16 MM	
2	520-2403	3	Stud, Injection Pump (M8)	147-0627	As Req.	1.20 MM	
3	526-2106	3	Washer, Flat (M8)	147-0628	As Req.	1.24 MM	
4	750-1006	3	Nut, Hex (M8)	147-0629	As Req.	1.28 MM	
5	LINE, FUEL INJECTION (No. 1)			147-0630	As Req.	1.32 MM	
	149-1765	1	Spec A	147-0631	As Req.	1.36 MM	
	147-0666	1	Begin Spec B	147-0632	As Req.	1.40 MM	
6	LINE, FUEL INJECTION (No. 2)			147-0633	As Req.	1.44 MM	
	149-1766	1	Spec A	147-0634	As Req.	1.48 MM	
	147-0667	1	Begin Spec B	147-0635	As Req.	1.52 MM	
7	LINE, FUEL INJECTION (No. 3)			147-0636	As Req.	1.56 MM	
	149-1767	1	Spec A	147-0637	As Req.	1.60 MM	
	147-0668	1	Begin Spec B	147-0638	As Req.	1.64 MM	
8	LINE, FUEL INJECTION (No. 4)			147-0639	As Req.	1.68 MM	
	149-1768	1	Spec A	147-0640	As Req.	1.72 MM	
	147-0669	1	Begin Spec B	147-0641	As Req.	1.76 MM	
9	INJECTOR, FUEL (Includes Seal)			147-0642	As Req.	1.80 MM	
	147-0562	6	Used With Flexible Leak Off Lines	147-0643	As Req.	1.84 MM	
	147-0700	6	Used With Metal Leak Off Lines	147-0644	As Req.	1.88 MM	
10	147-0436	6	Seal, Injector	147-0645	As Req.	1.92 MM	
11	CLAMP, FUEL LINE (Begin Spec B)			147-0646	As Req.	1.96 MM	
	147-0672	3	Clamps Two Lines	17	147-0647	6	Tip, Nozzle
	147-0673	2	Clamps Three Lines	18	147-0766	6	Banjo
	147-0674	1	Clamps Six Lines	19	147-0767	12	Washer
				20	147-0765	6	Screw, Hollow
				21	147-0780	6	Nut, Hex (M19) Used With 147-0700 Fuel Injector

FUEL INJECTION PUMP COMPONENTS

Code 13AA (2600 rpm Variable)
 Code 13AB (3600 rpm Variable)
 Code 13AC (1800 rpm Fixed)
 Code 13AD (3000 rpm Fixed)
 Code 13AE (1500 rpm Fixed)
 Code 13AF (3600 rpm Variable)
 Code 13AG (3600 rpm Variable)

Code 13AH (3000 rpm Variable)
 Code 13AJ (2800 rpm Variable)
 Code 13AK (2400 rpm Variable)
 Code 13AL (2200 rpm Variable)
 Code 13AM (2000 rpm Variable)
 Code 13AN (3600 rpm Variable)
 Code 13AP (3600 rpm Fixed)



NOTE: Component part numbers listed below do not apply to Code 13AB, 13AF, 13AG injection pump (147-0464-12) and Code 13AA, 13AK injection pump (147-0464-19) with 24 volt application. Component part numbers for this pump were not available at time of printing.

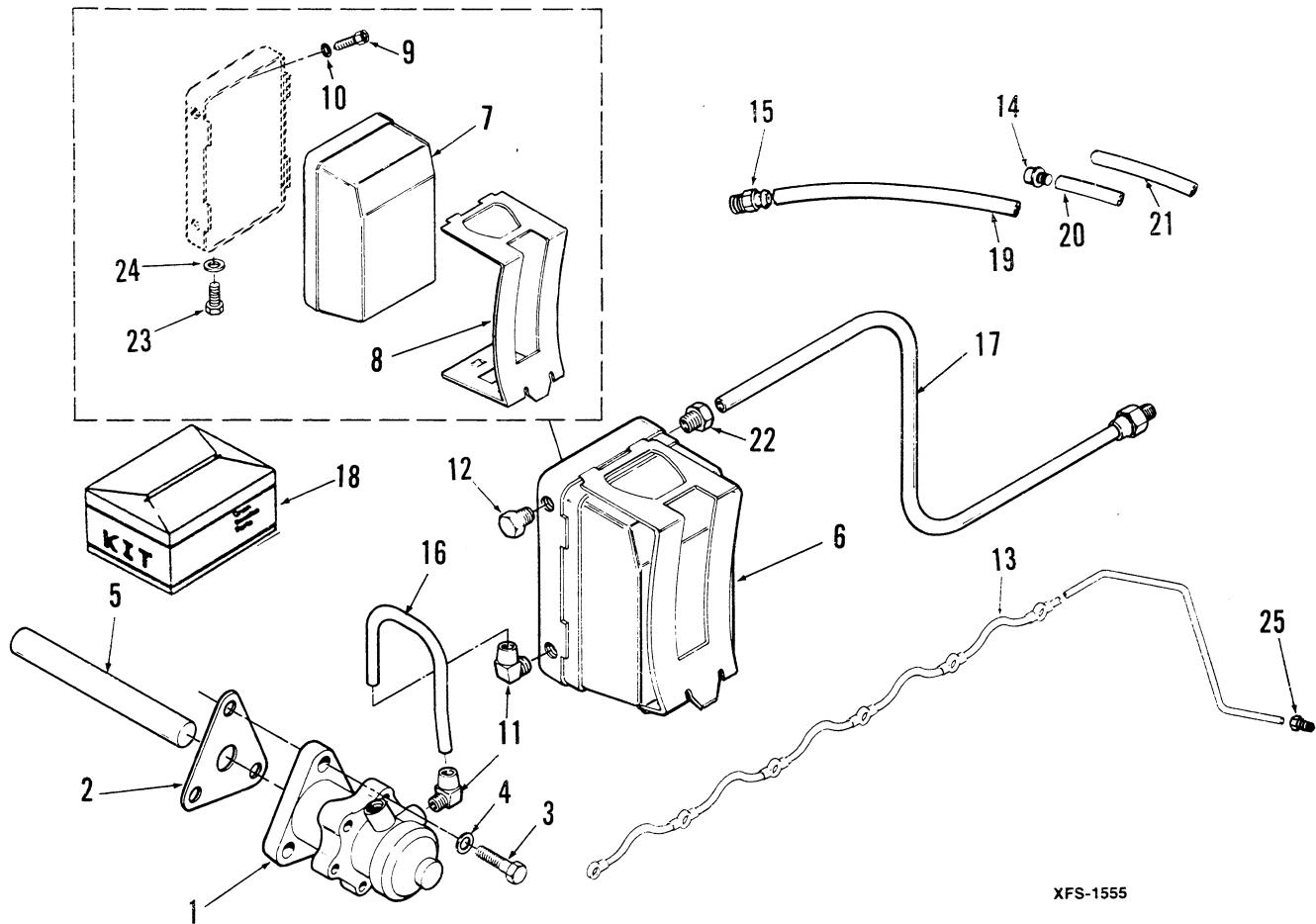
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
PUMP, FUEL INJECTION - COMPLETE (See Fuel Injection Group)			
1	147-0592	1	Strap, Terminal Grounding
SOLENOID AND FRAME KIT			
147-0593	1	All Except Code 13AN	
147-0705	1	Code 13AN	
3	147-0591	2	Washer, Terminal Insulating
4	147-0590	1	Gasket, Governor Cover
5	147-0589	1	Clip, Shaft Retaining
6	147-0588	2	Seal, Throttle Shaft
7	147-0587	2	Washer, Throttle Shaft Seal
8	147-0586	1	Washer, Guide Stud
9	147-0585	1	Gasket, Timing Line Cover
10	147-0584	1	Seal, Return Line Connector
11	147-0583	1	Seal, Locking Plate
12	147-0582	2	Seal, Pivot Shaft
13	147-0581	1	Seal, Advance Screw Hole Plug
14	147-0580	2	Seal, Head Locating Screws
15	147-0579	1	Connector, Return Line
16	147-0578	1	Nut, Drive Shaft
17	509-0265	1	Seal, Pilot Tube

NOTE: For component parts not listed contact manufacturer shown on nameplate.

FUEL SYSTEM

Code 15AA (Low Pressure, Glass Filter, Soft Lines, With Drain)
 Code 15AG (Low Pressure, Metal Filter and Lines, With Drain)
 Code 15AH (Low Pressure, Glass Filter, Metal Lines, With Drain)

5100-0018
 5100-0626
 5100-0922



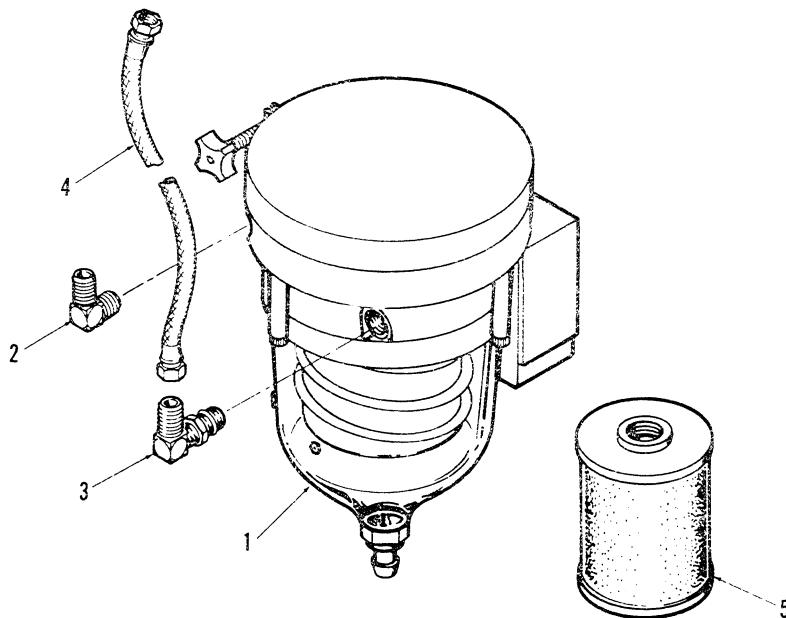
XFS-1555

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	149-2067	1	Pump Kit, Fuel Transfer (Includes Mounting Gasket)	11	502-0774	2	Elbow, Flareless Tube Fitting (Includes Sleeve and Nut)
2	149-1728	1	Gasket, Fuel Transfer Pump	12	502-0153	2	Plug, Pipe (1/4")
3	718-1021	3	Screw, Cap - Hex Head (M6 x 20 MM)	13	147-0693	1	Tube, Nozzle Leak Off - Code 15AG, 15AH
4	740-1004	3	Washer, Flat (M6)	14	502-0736	1	Plug
5	149-1732	1	Pushrod, Fuel Transfer Pump	15	502-0735	1	Connector, Male - Code 15AA
6	FILTER ASSEMBLY			16	149-1797	1	Line, Fuel
	149-1755	1	Code 15AA, 15AH (Includes Filter, Base, Clamp, Drain Plug, Drain Seal, and Plugs)	17	149-1798	1	Line, Fuel
	149-1803	1	Code 15AG (Includes Base, Filter and Clamp)	18	149-2069	1	Repair Package - Transfer Pump
7	FILTER, FUEL			19	503-1055	1	Line, Fuel Return (Flexible) - 380 MM Long - Code 15AA
	149-1754	1	Code 15AA, 15AH	20	503-1054	1	Line, Fuel Return (Flexible) - 25 MM Long - Code 15AA
	149-1802	1	Code 15AG	21	503-1053	5	Line, Fuel Return (Flexible) - 180 MM Long - Code 15AA
8	149-1801	1	Clamp, Fuel Filter	22	502-0773	1	Connector, Flareless Tube Fitting (Includes Sleeve and Nut)
9	725-1074	2	Screw, Cap - Socket Head (M10 x 20 MM)	23	149-1835	1	Plug, Filter Drain
10	740-1008	2	Washer, Flat (M10)	24	149-1836	1	Gasket, Filter Drain Plug
				25	502-0830	1	Connector, Male - Code 15AG, 15AH (Includes Sleeve and Nut)

WATER SEPARATOR

Code 15AD

5100-0339

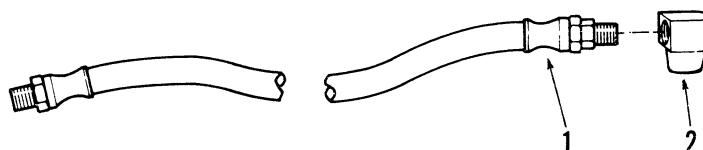


REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	
1	149-1866	1	Separator, Water	
2	502-0041	1	Elbow, Inverted Male	
3	502-0840	1	Elbow, O-Ring Boss	
4	501-0450	1	Line, Flexible - Fuel	FS-1500
5	149-1865	1	Element, Water Separator	

FLEXIBLE FUEL LINE

Code 15AF

5100-0515



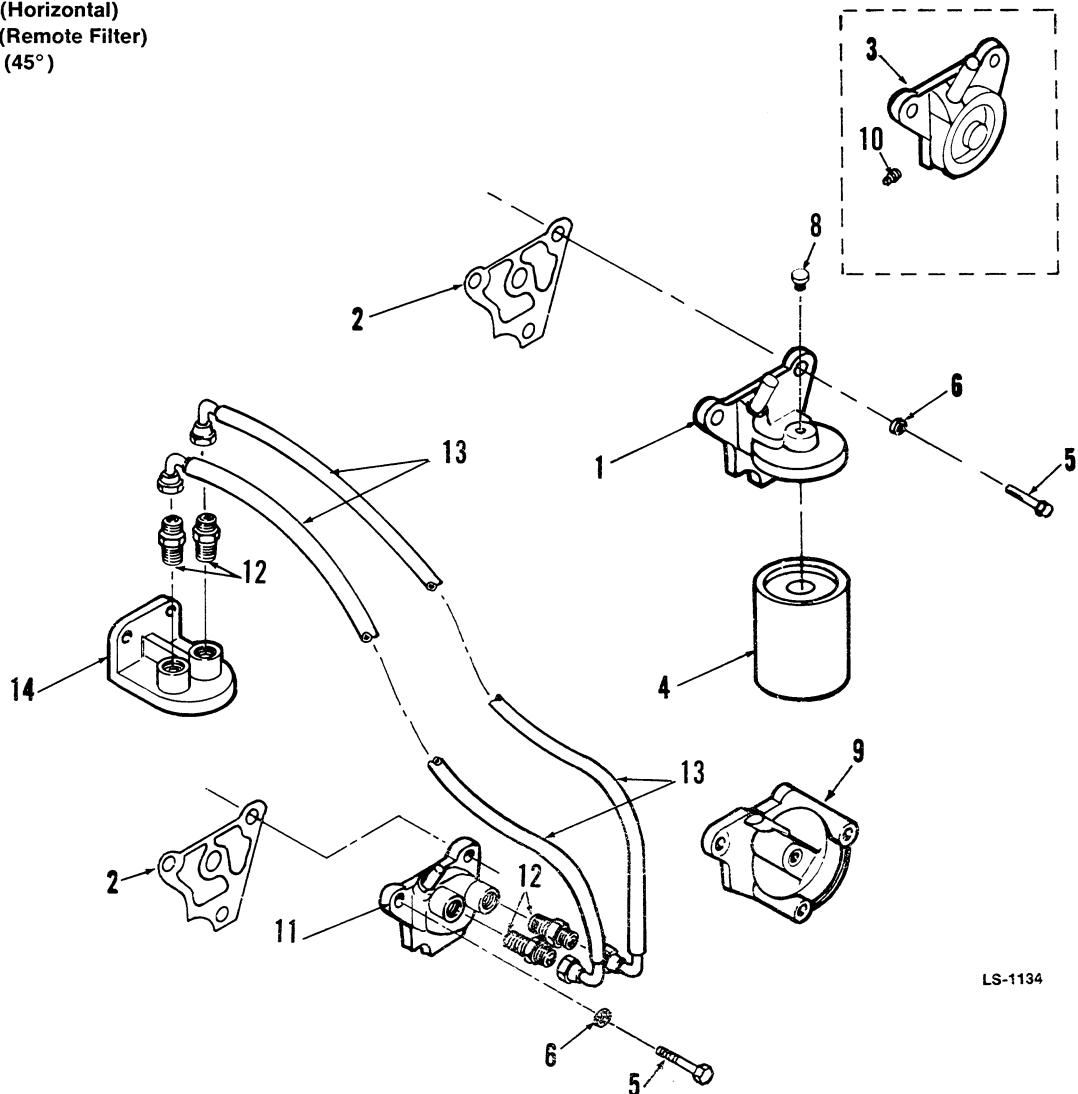
FS-1629

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	501-0002	1	Line, Flexible Fuel (7")
2	502-0041	1	Elbow, Male

OIL FILTER

Code 17AJ (Vertical Down)
 Code 17AK (Horizontal)
 Code 17AS (Remote Filter)
 Code 17AW (45°)

5100-0383
 5100-0454
 5100-0539
 5100-0802



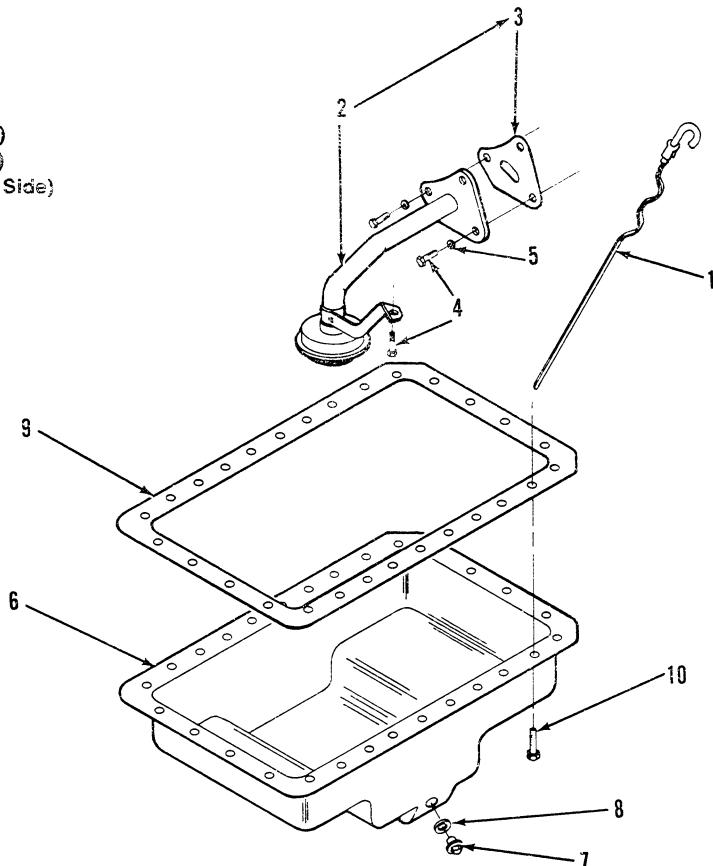
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	ADAPTER, OIL FILTER (Includes Gasket) - Code 17AJ 122-0568 122-0613	1 1	Spec A Begin Spec B
2	122-0635	1	Gasket, Oil Filter Adapter
3	ADAPTER, OIL FILTER (Includes Gasket) - Code 17AK 122-0567 122-0614	1 1	Spec A Begin Spec B
4	122-0550	1	Filter, Oil
5	SCREW, CAP - HEX HEAD 725-1051	3	M8 x 25 MM - Code 17AJ (Socket Head)
	718-1040	2	M8 x 40 MM - Code 17AK
	725-1053	1	M8 x 35 MM - Code 17AK (Socket Head)
	718-1040	3	M8 x 40 MM - Code 17AS
	718-1037	1	M8 x 25 MM - Code 17AW
	718-1804	2	M8 x 110 MM - Code 17AW

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
6	WASHER, FLAT (M8) 526-2108 526-2108	3 3	Code 17AJ, 17AS, 17AW Code 17AK
	740-1802	1	Code 17AK
8	505-0274	1	Plug, Pipe (1/8") Begin Spec B
9	122-0606	1	Adapter, Oil Filter - Code 17AW
10	505-0266	1	Plug, Pipe (3/8") Code 17AK - Used During Spec B
11	122-0612	1	Adapter, Oil Filter (Includes Gasket) Code 17AS
12	502-0873	4	Adapter, Oil Lines - Code 17AS
13	501-0479	2	Line, Oil - Code 17AS
14	122-0581	1	Base, Oil Filter - Code 17AS

OIL PAN

Code 17AA (20° Tilt - Drain to Accessory Side)
 Code 17AB (30° Tilt - Drain to Accessory Side)
 Code 17AC (20° Tilt - Drain to Front)
 Code 17AE (20° Tilt - Drain to Rear)
 Code 17AG (20° Tilt - Drain to Non-Accessory Side)
 Code 17AH (30° Tilt - Drain to Non-Accessory Side)
 Code 17AP (20° Tilt - Drain to Front and Accessory Side)
 Code 17AR (20° Tilt - Drain to Accessory Side)

5100-0104
 5100-0357
 5100-0366
 5100-0368
 5100-0371



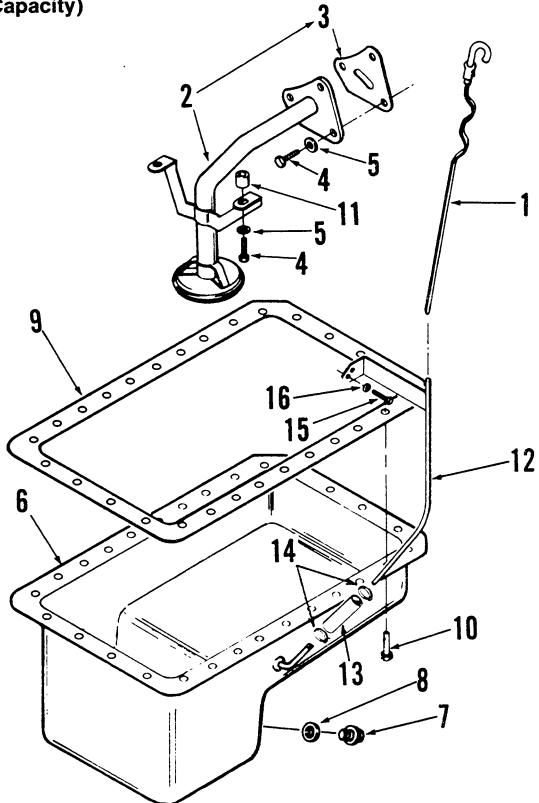
LS-1059

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	INDICATOR, OIL LEVEL 123-1524	1	Codes 17AA, 17AC, 17AE, 17AG, 17AP, 17AR
	123-1542	1	Codes 17AB, 17AH
2	PICKUP KIT, OIL (Includes Gasket) 120-1006	1	Code 17AA, 17AC, 17AE, 17AG, 17AP, 17AR
	120-1005	1	Code 17AB, 17AH
3	120-0917	1	Gasket, Oil Pickup
4	SCREW, CAP - HEX HEAD 718-1046	2	M8 x 70 MM
	718-1036	2	M8 x 20 MM
5	740-1006	4	Washer, Flat (M8)
6	PAN, OIL 102-1190	1	Codes 17AA, 17AC, 17AE, 17AG, 17AP, 17AR
	102-1191	1	Codes 17AB, 17AH
7	PLUG, OIL DRAIN (Not Used on Generator Application Engines or Engines With Remote Oil Drain) 102-1047	1	Early Models (Prior to January 1983) - 12 MM
	102-1146	1	Late Models (Begin January 1983) - 18 MM
8	GASKET, OIL DRAIN PLUG 102-1046	1	Early Models (Prior to January 1983) - 12 MM Plug
	102-1147	1	Late Models (Begin January 1983) - 18 MM Plug
9	102-1036	1	Gasket, Oil Pan
10	815-0547	36	Screw, Cap - Hex Head (Includes Washer) - M8 x 20 MM

OIL PAN

Code 17AZ (20° Tilt - Drain to Rear, 8.5 Liter Capacity)

5100-0652



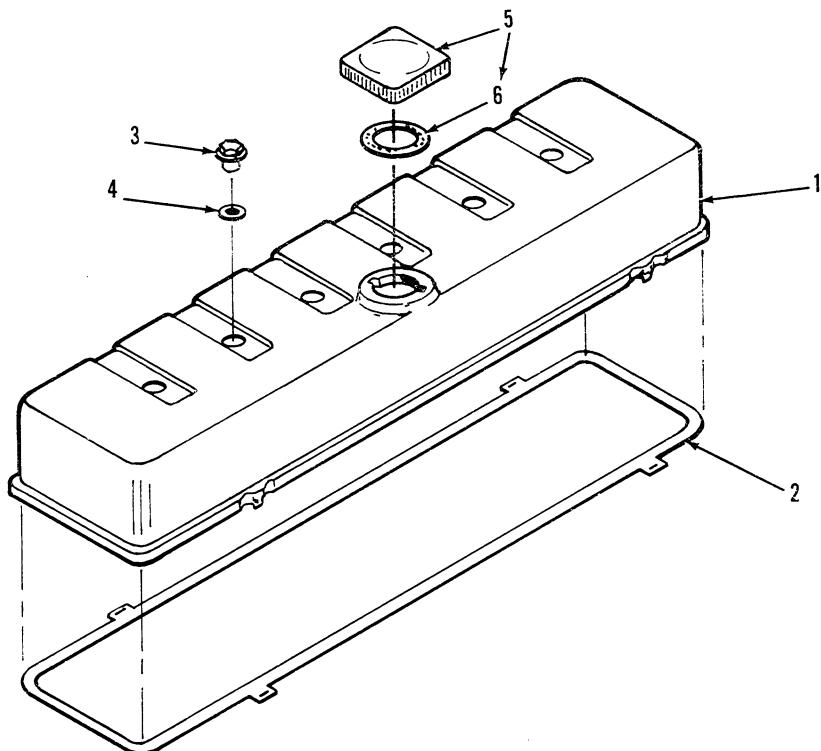
LS-1059-1

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	123-1631	1	Indicator, Oil Level
2	120-1149	1	Pickup Kit, Oil (includes Gasket)
3	120-0917	1	Gasket, Oil Pickup
4	SCREW, CAP - HEX HEAD 718-1056 718-1048 718-1036	2 2 1	M10 x 35 MM M8 x 80 MM M8 x 20 MM
5	WASHER, FLAT 740-1006 740-1008	3 2	M8 M10
6	102-1265	1	Pan, Oil
7	102-1146	1	Plug, Oil Drain
8	102-1147	1	Gasket, Oil Drain Plug
9	102-1036	1	Gasket, Oil Pan
10	815-0547	36	Screw, Cap - Hex Head (Includes Washer) - M8 x 20 MM
11	191-1321	2	Spacer, Oil Pickup
12	123-1644	1	Tube, Oil Level
13	503-1344	1	Hose
14	503-1133	2	Clamp, Hose
15	718-1018	2	Screw, Cap - Hex Head (M6 x 12 MM)
16	740-1004	2	Washer, Flat (M6)

ROCKER COVER

Code 17AL (Top Center)
Code 17AM (Top Center and Side Gearcase)

5100-0079



LS-1060

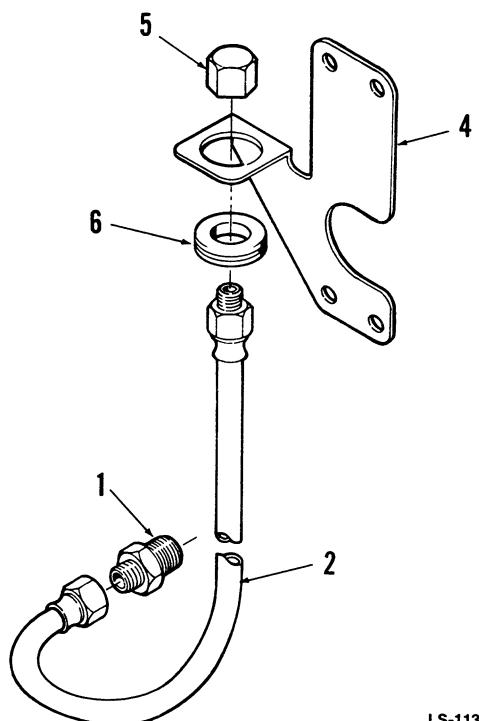
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	115-0346	1	Cover, Rocker
2	115-0244	1	Gasket, Rocker Cover
3	115-0320	6	Capnut, Rocker Cover
4	115-0232	6	Gasket, Capnut
5	123-1605	1	Cap, Oil Fill (Includes Gasket)
6	123-1518	1	Gasket, Oil Fill Cap

NOTE: Additional parts for Code 17AM will be found in the Gearcase Group.

REMOTE OIL DRAIN

Code 17BA

5100-0570

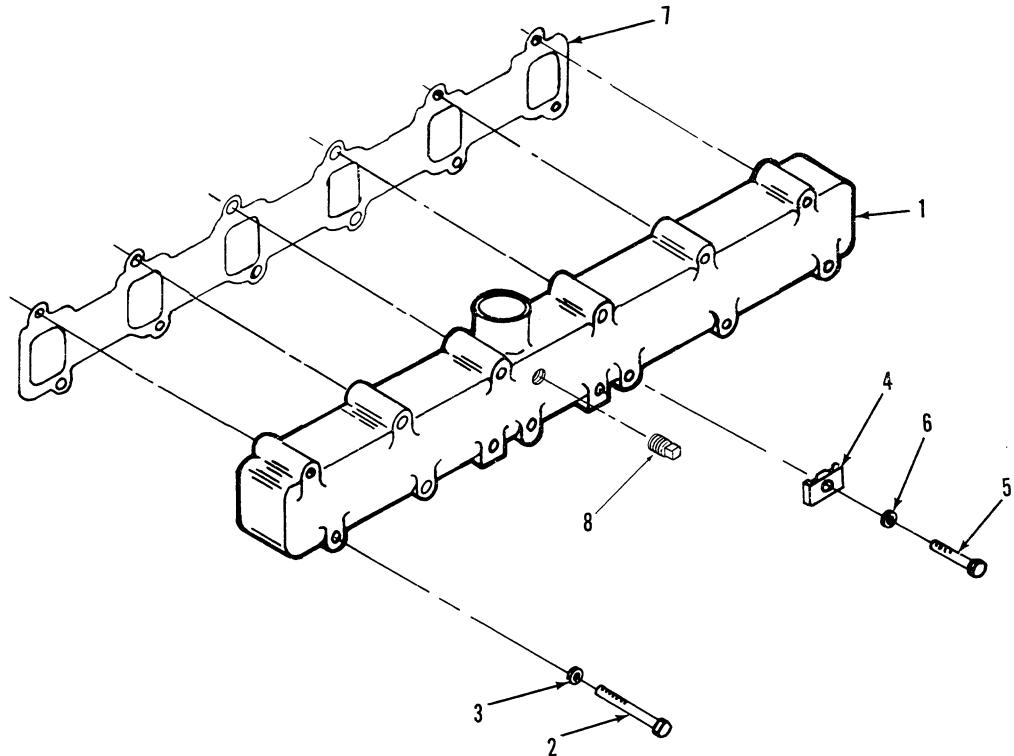


REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	102-1237	1	Adapter, Oil Drain
2	LINE, OIL DRAIN 501-0482	1	Used With 20° Tilt Oil Pan (615 MM Long)
	501-0494	1	Used With 30° Tilt Oil Pan (787 MM Long)
4	102-1235	1	Bracket, Oil Drain
5	502-0876	1	Cap, Pipe
6	508-0250	1	Grommet

INTAKE MANIFOLD

Code 19AA (Center Up)

5100-0481



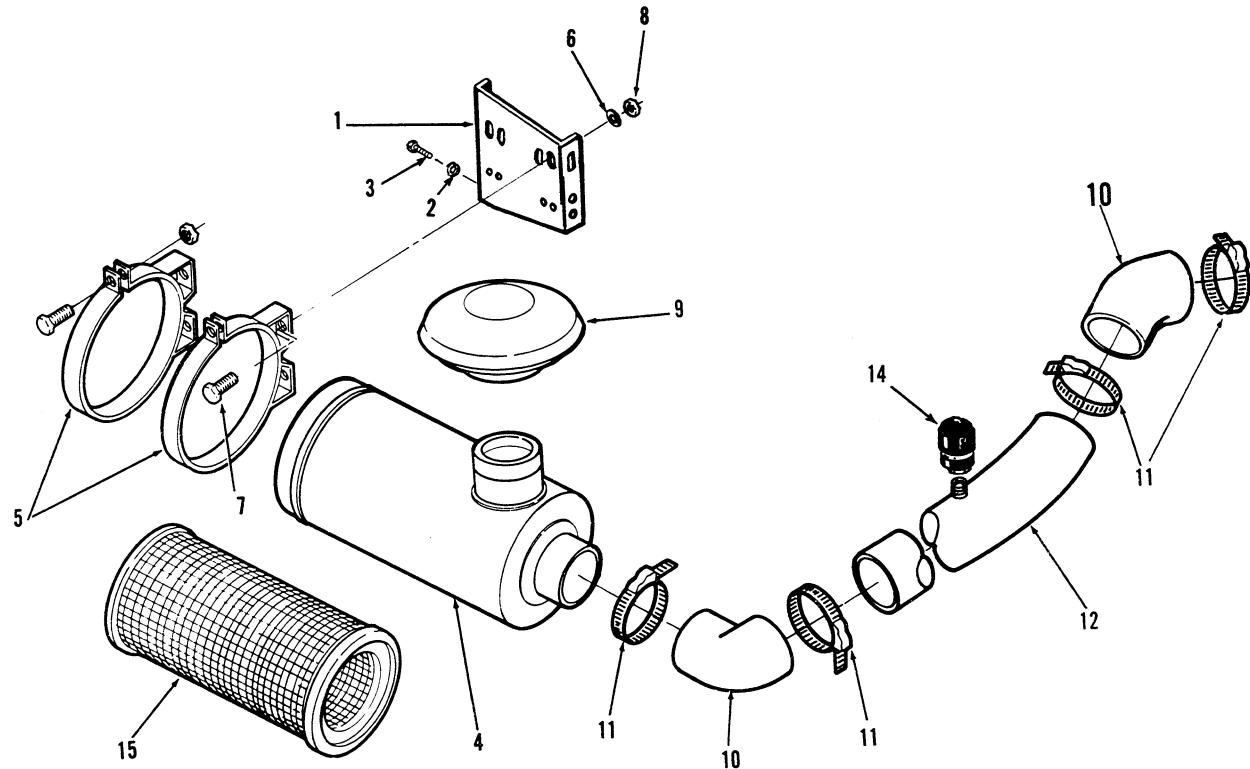
EXS-1050

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	154-2461	1	Manifold, Intake (Includes Plug)
2	718-1801	12	Screw, Cap - Hex Head (M8 x 85 MM) (Engines Without Code 31AL)
3	740-1006	12	Washer, Flat (M8)
4	147-0439	4	Clamp, Injection Lines, Spec A
5	718-1022	2	Screw, Cap - Hex Head (M6 x 25 MM) - Spec A
6	740-1004	2	Washer, Flat (M6) - Spec A
7	154-2300	1	Gasket, Intake Manifold
8	505-0274	1	Plug, Pipe (1/8")

AIR CLEANER

Code 19AB (Medium Duty - Single Stage - Engine Mounted)

5100-0186



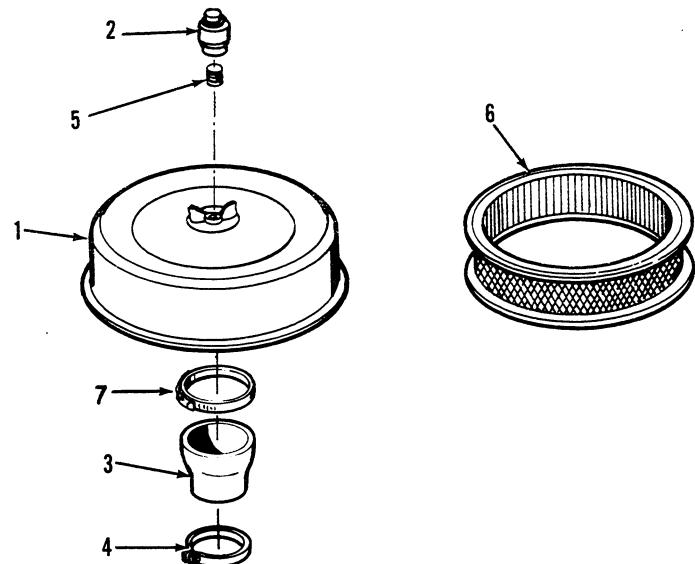
XFS-1383

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	140-1772	1	Bracket, Air Cleaner Mounting
2	740-1010	1	Washer, Flat - Hardened (M12)
3	718-1073	1	Screw, Cap - Hex Head (M12 x 25 MM)
4	140-1794	1	Cleaner, Air (Includes Element)
5	140-0317	2	Band, Air Cleaner
6	740-1006	4	Washer, Flat-Hardened (M8)
7	718-1036	4	Screw, Cap - Hex Head (M8 x 20 MM)
8	750-1006	4	Nut, Hex (M8)
9	140-1435	1	Hood, Air Inlet
10	140-1775	2	Elbow, 90°
11	503-0354	4	Clamp, Hose
12	140-1802	1	Tube, Air Inlet
13	140-1791	1	Indicator, Service
14	140-1455	1	Element, Air Cleaner

AIR CLEANER

Code 19AJ

5100-0106



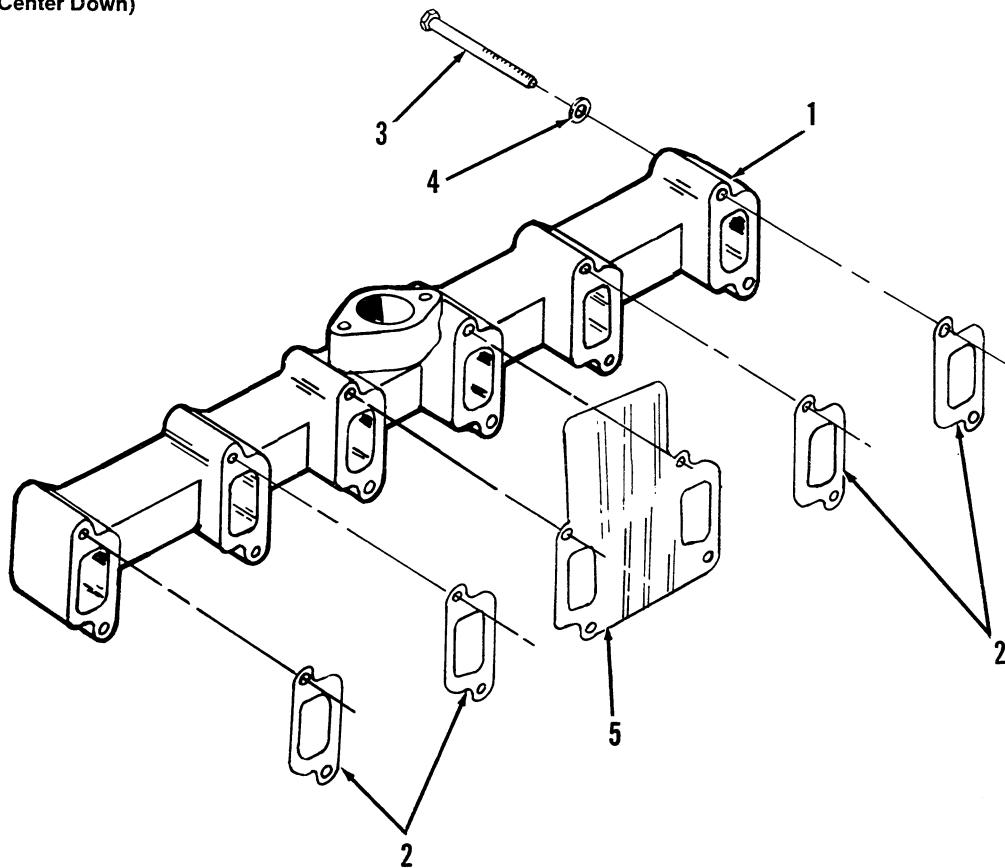
FS-1385

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	140-1091	1	Cleaner, Air (Includes Element)
2	140-0961	1	Indicator, Service
3	503-1181	1	Hose, Air Cleaner
4	503-0465	1	Clamp, Hose
5	505-0098	1	Nipple, Pipe
6	140-1089	1	Element, Air Cleaner
7	503-0648	1	Clamp, Hose

EXHAUST MANIFOLD

Code 21AA (Center Up)
Code 21AB (Center Down)

5100-0029
5100-0162



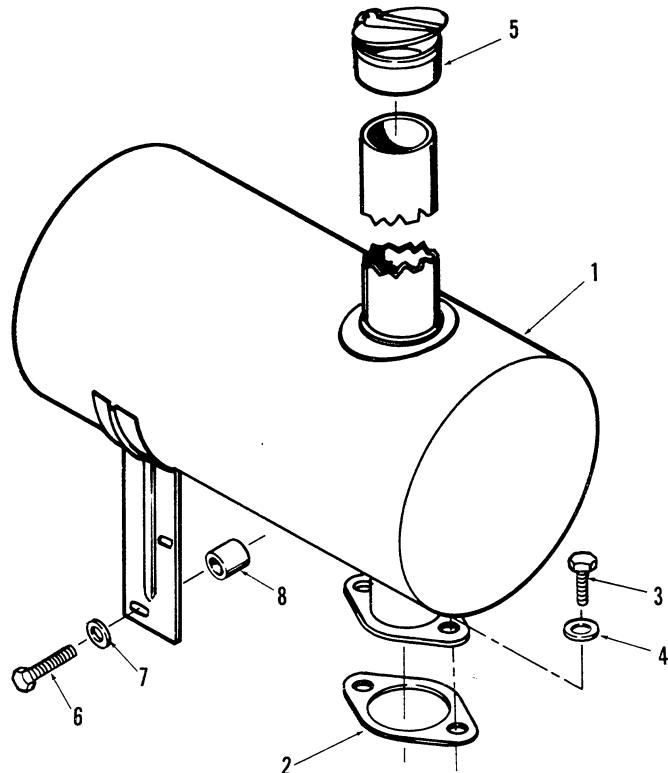
EXS-1051

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	154-2389	1	Manifold, Exhaust
2	GASKET, EXHAUST MANIFOLD 154-2162 154-2162	4 6	Code 21AA Code 21AB
3	SCREW, CAP - HEX HEAD 800-2524 718-1048	12 12	Late Models (M8 x 90 MM) Early Models (M8 x 80 MM)
4	740-1006	12	Washer, Flat (M8)
5	154-2325	1	Gasket, Exhaust Manifold - Code 21AA

MUFFLER

Code 21AC (Horizontal)

5100-0372



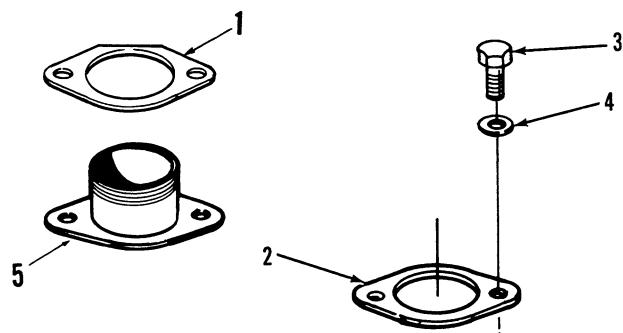
XS-1091

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	155-1967	1	Muffler, Exhaust
2	155-1920	1	Gasket, Muffler Mounting
3	718-1054	2	Screw, Cap - Hex Head (M10 x 25 MM)
4	740-1008	2	Washer, Flat (M10)
5	155-0986	1	Cap, Rain
6	718-1807	2	Screw, Cap - Hex Head - (M8 x 95 MM)
7	850-2008	2	Washer, Flat (M8)
8	155-1964	2	Spacer, Muffler Brace

EXHAUST FLANGE

Code 21AG (Exhaust Flange - Without Threaded Nipple)
Code 21AG (Exhaust Flange - With Threaded Nipple)
Code 21AJ (Gasket Only)

5100-0285
5100-0338
5100-1051



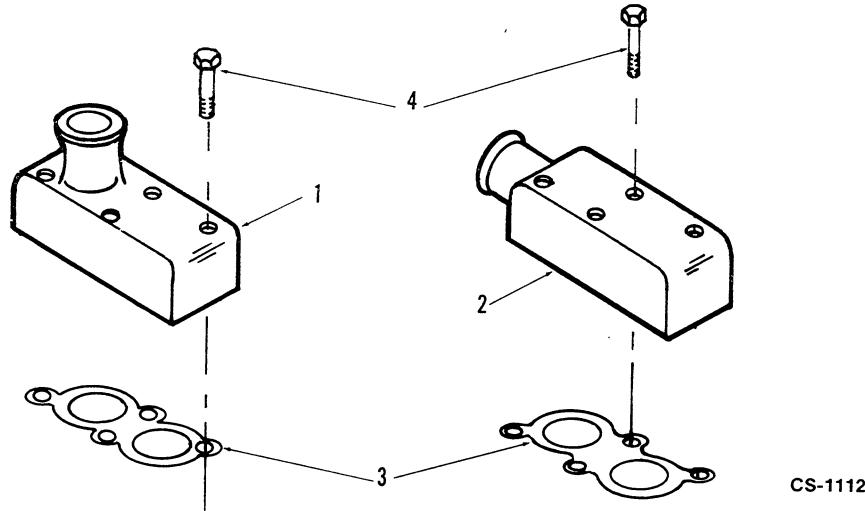
EXS-1065

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	155-1921	1	Flange, Exhaust - Code 21AG (Without Threaded Nipple)
2	155-1920	1	Gasket
3	718-1054	2	Screw, Cap - Hex Head (M10 x 25 MM) - Code 21AG
4	740-1008	2	Washer, Flat (M10) - Code 21AG
5	155-1916	1	Flange, Exhaust - Code 21AG (With Threaded Nipple)

COOLANT OUTLET CONNECTOR

Code 23AA (Vertical, Accessory Side)
 Code 23AB (Horizontal, Non-Accessory Side)
 Code 23AC (Horizontal, Accessory Side)
 Code 23CP (Vertical, Non-Accessory Side)

5100-0129



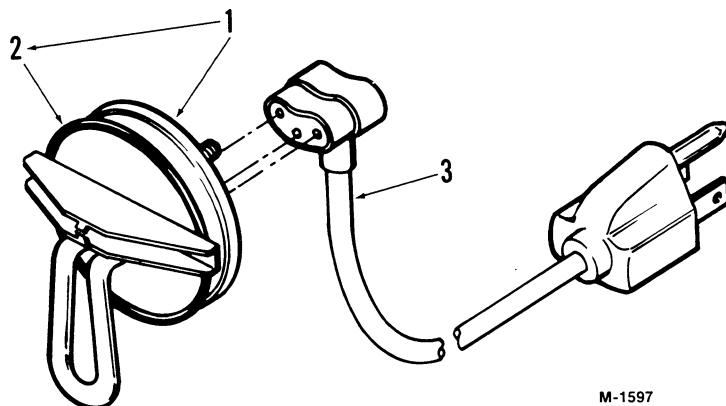
CS-1112

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	309-0473	1	Cover, Thermostat (Includes Gasket) - Code 23AA, 23CP
2	309-0475	1	Cover, Thermostat (Includes Gasket) - Code 23AB, 23AC
3	309-0424	1	Gasket, Thermostat Cover
4	SCREW CAP - SOCKET HEAD 725-1056 725-1058	4	M8 x 50 MM - Code 23AA, 23CP M8 x 60 MM - Code 23AB, 23AC

ENGINE BLOCK HEATER

Code 23AL (600 Watt)

5100-0540



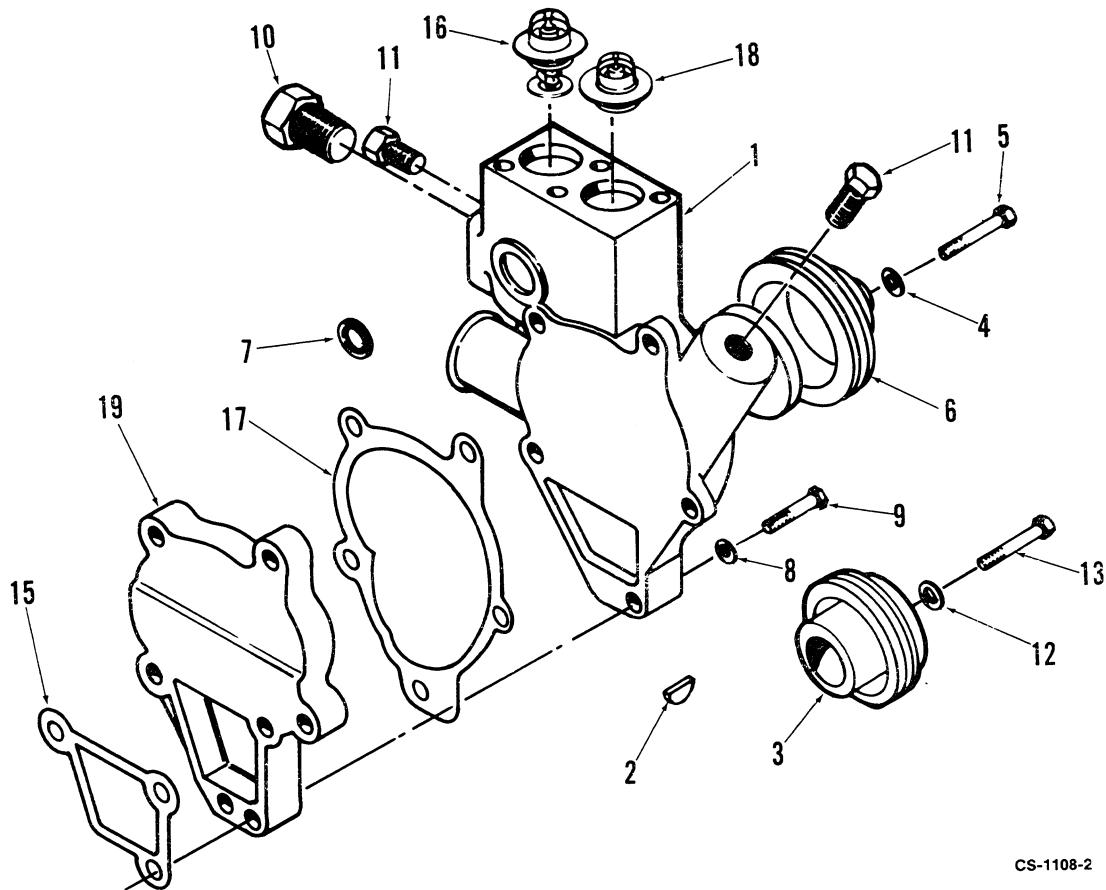
M-1597

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	333-0187	1	Heater (Includes O-Ring Seal)
2	509-0104	1	Seal, O-Ring
3	335-0158	1	Cord, Heater

COOLANT PUMP

Code 23AS (1.18 Drive Ratio - Automotive Type)

5100-0891



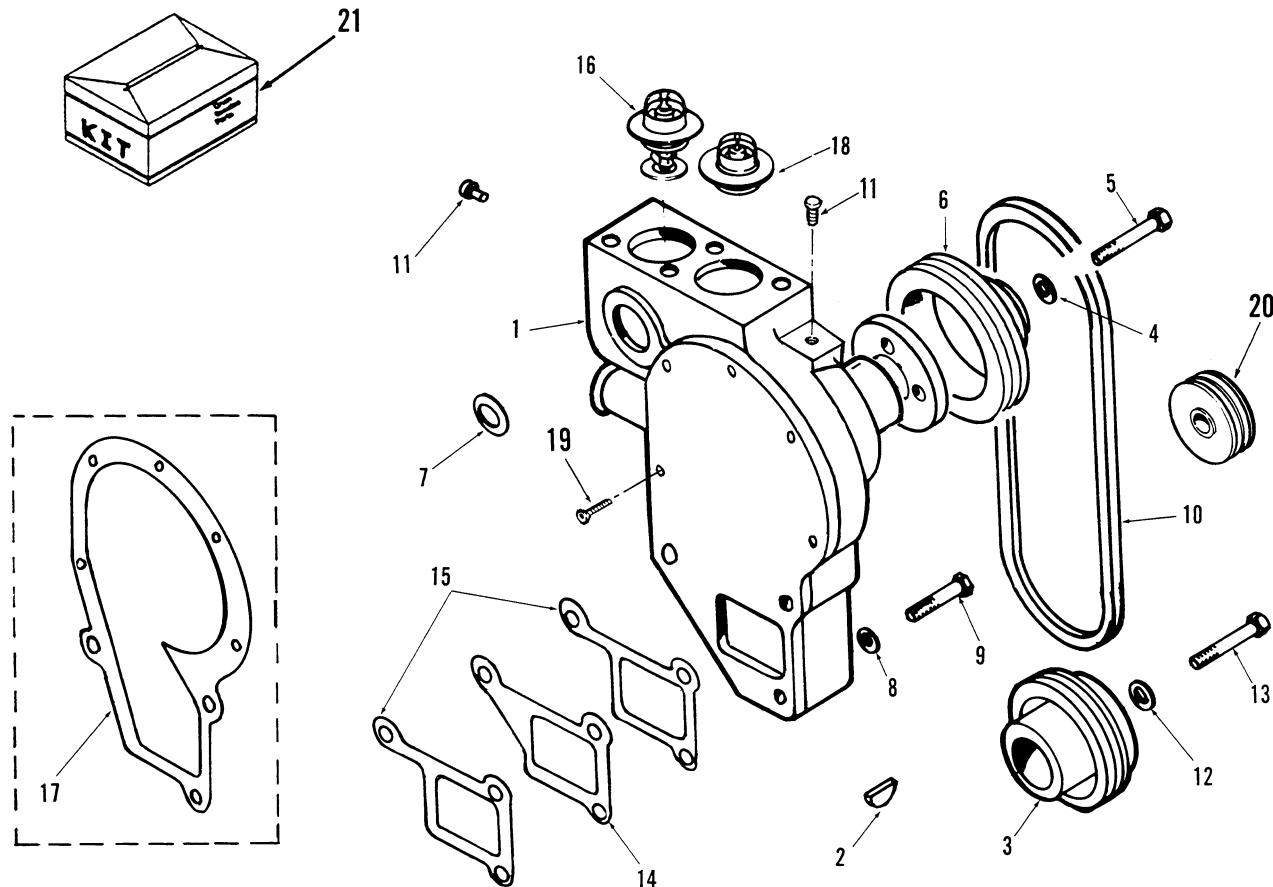
CS-1108-2

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	131-0421	1	Pump Kit, Coolant (Includes Mounting Gaskets)
2	515-0245	1	Key, Pulley
3	104-1515	1	Pulley, Crankshaft
4	740-1006	4	Washer, Flat (M8)
5	718-1036	4	Screw, Cap - Hex Head (M8 x 20 MM)
6	131-0412	1	Pulley, Coolant Pump
7	509-0264	1	Seal, O-Ring
8	740-1006	4	Washer, Flat (M8)
9	SCREW, CAP - HEX HEAD 718-1041 718-1046 725-1051	4 1 2	Pump to Base (M8 x 45 MM) Pump to Block (M8 x 70 MM) Base to Block (M8 x 25 MM)
10	502-0317	1	Plug, Pipe - Hex (3/4")
11	502-0775	3	Plug, Pipe - Brass Hex (3/8")
12	526-0283	1	Washer, Flat (M8)
13	720-1123	1	Screw, Cap - Hex Head (M16 x 60 MM)
15	131-0409	1	Gasket, Coolant Pump Mounting
16	309-0458	1	Thermostat Kit (192°) Includes Cover Gasket
17	131-0408	1	Gasket, Coolant Pump Base
18	309-0462	1	Thermostat Kit (180°) Includes Cover Gasket
19	131-0406	1	Base, Coolant Pump

COOLANT PUMP

Code 23AF (Low Flow, .97 Drive Ratio)
Code 23AG (High Flow, .61 Drive Ratio)
Code 23AN (Low Flow, 1.07 Drive Ratio)
Code 23BA (High Flow, .81 Drive Ratio)
Code 23BC (Low Flow, 1.29 Drive Ratio)
Code 23BE (Low Flow, 1.29 Drive Ratio)

Code 23BG (Low Flow, .81 Drive Ratio)
Code 23BH (High Flow, .97 Drive Ratio)
Code 23BJ (High Flow, .73 Drive Ratio)
Code 23BP (Low Flow, 1.29 Drive Ratio)
Code 23CL (Low Flow, 1.53 Drive Ratio, No Belts)



CS-1108

COOLANT PUMP

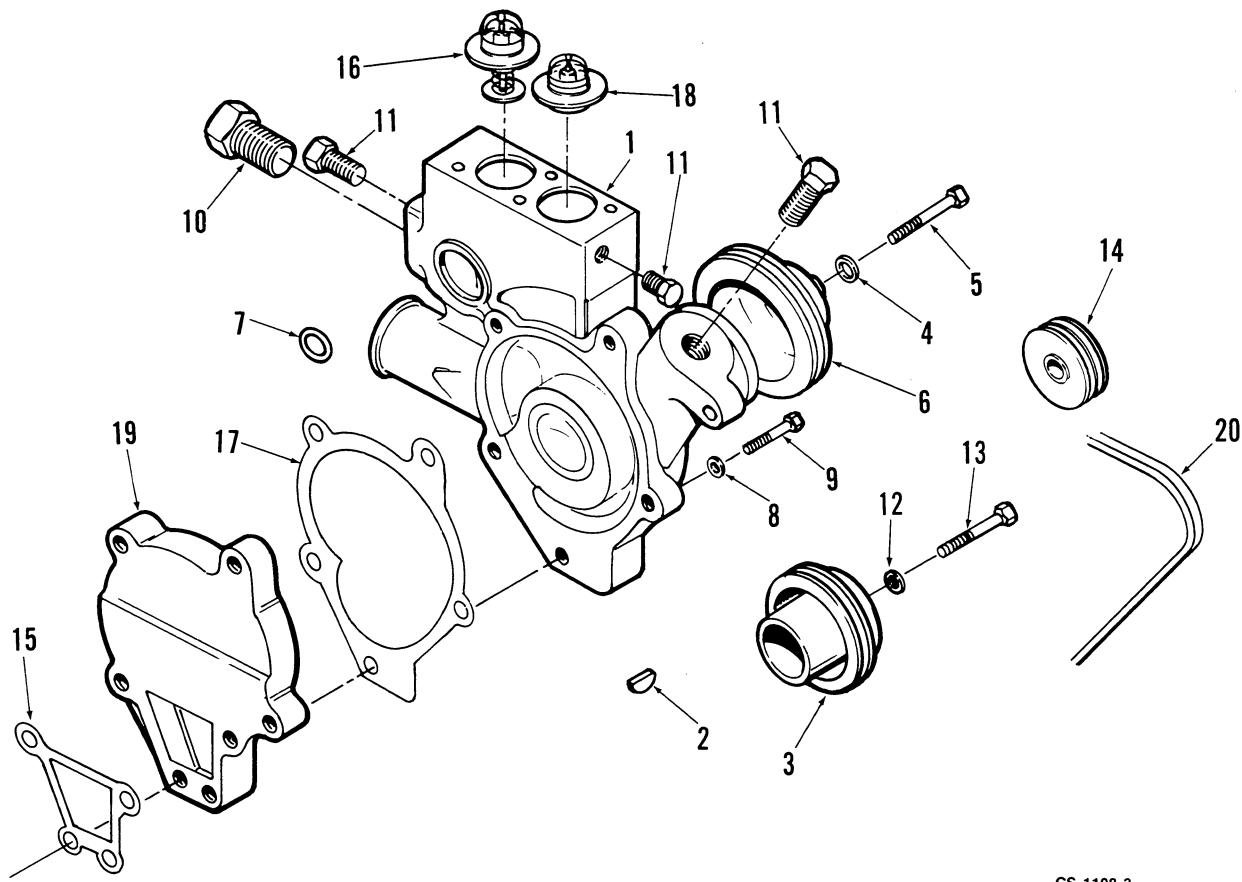
5100-0155	5100-0771-01	5100-0778-01
5100-0158	5100-0772-02	5100-0778-02
5100-0763	5100-0772-03	5100-0779
5100-0764	5100-0773	5100-0793
5100-0767-01	5100-0774	5100-0794
5100-0768-02	5100-0775	5100-0797
5100-0769	5100-0776	5100-0945
5100-0770-01		5100-0946
		5100-1053

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	PUMP KIT, COOLANT (Includes Mounting Gaskets)						
	131-0351	1	Code 23AF, AN, BE, BG, BP, CL				
	131-0349	1	Code 23AG, BA, BH, BJ	511-0147-01	1		Code 23BA
2	515-0245	1	Key - Crankshaft Pulley	511-0147-01	2		High Mounted Alternator
3	PULLEY, CRANKSHAFT			511-0147-08	1		Low Mounted Alternator
							Code 23BC, BE (Some Engines Require 2)
				511-0147-13	1		High Mounted Alternator
	104-1472	1	Code 23AF, BE, BH, BJ, BP, CL	511-0147-08	1		Low Mounted Alternator
	104-1466	1	Code 23AG, AN, BA, BG				Code 23BG
				511-0147-13	1		High Mounted Alternator
	104-1468	1	Code 23AF, BE, BH, BJ	511-0147-01	2		Low Mounted Alternator
	104-1467	1	Code 23AG, AN, BA, BG				Code 23BJ (Some Engines Require 2)
4	740-1006	4	Washer, Flat (M8)	511-0147-03	1		High Mounted Alternator
5	718-1035	4	Screw, Cap - Hex Head (M8 x 16MM)	511-0147-06	1		Low Mounted Alternator
6	PULLEY, COOLANT PUMP			511-0147-06	1		High Mounted Idler Pulley
							Code 23BP
	131-0344	1	Single Groove Code 23AF, BA, BG, BH	511-0147-13	1		High Mounted Alternator
	131-0346	1	Code 23AG, BJ	511-0147-08	1		Low Mounted Alternator
	131-0342	1	Code 23AN, BE, BP	11	PLUG, BRASS		
	131-0341	1	Code 23CL	502-0775	3	3/8"	
				502-0317	1	3/4"	
	131-0345	1	Double Groove Code 23AF, BA, BG, BH	12	526-0283	1	Washer, Flat (M8)
	131-0347	1	Code 23AG, BJ	13	720-1123	1	Screw, Cap - Hex Head (M16 x 60 MM)
	131-0343	1	Code 23AN, BE				Thermostat Kit (192°)
7	509-0264	1	Spacer, O-Ring	14	131-0324	1	Includes Cover Gasket
8	740-1006	3	Washer, Flat (M8)	15	131-0294	2	Gasket, Coolant Pump
9	718-1044	3	Screw, Cap - Hex Head (M8 x 60 MM)	16	309-0458	1	Mounting Thermostat Kit (192°)
10	BELT			17	131-0335	1	Includes Cover Gasket
				18	309-0462	1	Gasket, Coolant Pump Backplate
	511-0147-15	1	Code 23AF, BH (Some Engines Require 2)	19	815-0612	5	Thermostat Kit (180°)
				20	PULLEY, ALTERNATOR		Includes Cover Gasket
	511-0147-17	1	High and Low Mounted Alternator				Screw, Torque Drive (Special)
				191-1338	1	71.7 MM Diameter	
				191-1339	1	78 MM Diameter	
	511-0147-15	1	High Mounted Idler Pulley				Double Groove
	511-0147-05	1	Code 23AG (Some Engines Require 2)	191-1342	1	71.7 MM Diameter	
	511-0147-11	1	High Mounted Alternator	191-1333	1	78 MM Diameter	
							Kit, REPAIR - Coolant Pump (Includes Gaskets, Seal, Hub, Bearing, Impeller and Backplate Mounting Screws)
				541-0214-04	1	Code 23AF, AN, BE, BG, BP, CL	
				541-0214-03	1	Code 23AG, BA, BH, BJ	

COOLANT PUMP

Code 23CF (Pulley Ratio and Belts, 1.29 Drive Ratio)
 Code 23CR (High Flow, Low Fan Center)
 Code 23CR (Pulley Ratio and Belts, .97 Drive Ratio)
 Code 23CS (Pulley Ratio and Belts, 1.07 Drive Ratio)

5100-0940
 5100-0952
 5100-1106
 5100-1107



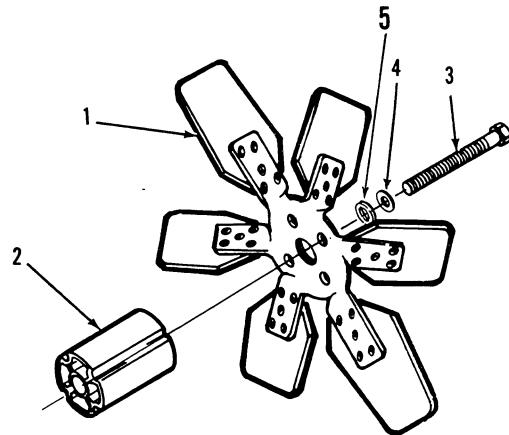
CS-1108-3

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	131-0434	1	Kit, Coolant Pump (Includes Mounting Gaskets, Plugs and O-Ring Seal)	10	502-0317	1	Plug, Pipe - Hex (3/4")
2	515-0245	1	Key, Pulley	11	502-0775	4	Plug, Pipe - Brass, Hex (3/8")
3	PULLEY, CRANKSHAFT			12	526-0283	1	Washer, Flat (M8)
	104-1618	1	Single Groove - Code 23CF	13	720-1123	1	Screw, Cap - Hex Head (M16 x 60 MM)
	104-1468	1	Double Groove	14	PULLEY, ALTERNATOR		(Double Groove)
	104-1467	1	Code 23CR	191-1333		1	Code 23CR
	104-1467	1	Code 23CS	191-1342		1	Code 23CS
4	740-1006	4	Washer, Flat (M8)	15	131-0409	1	Gasket, Coolant Pump Mounting
5	718-1035	4	Screw, Cap - Hex Head (M8 x 16MM)	16	309-0458	1	Kit, Thermostat (192°)
6	PULLEY, COOLANT PUMP			17	131-0408	1	Includes Cover Gasket
	131-0344	1	Single Groove	18	309-0462	1	Gasket, Coolant Pump Base
	131-0342	1	Code 23CR	19	131-0406	1	Kit, Thermostat (180°)
	131-0424	1	Code 23CS	20	BELT		Includes Cover Gasket
7	509-0264	1	Double Groove - Code 23CF				Base, Coolant Pump
8	740-1006	5	Seal O-Ring				Code 23CR
9	SCREW, CAP - HEX HEAD						Single Groove Crankshaft
	718-1041	3	Pump to Base				Pulley
	718-1042	1	M8 x 45MM				Double Groove Crankshaft
	718-1046	1	M8 x 50MM				Pulley
	725-1051	2	Pump to Block (M8 x 70 MM)				Code 23CS
			Base to Block (M8 x 25 MM)				

COOLING SYSTEM - FAN

Code 23AH (Suction Fan and 89 MM Spacer)
Code 23AU (Blower Fan and 53 MM Spacer)
Code 23CW (32 MM Spacer)
Code 23CZ (Suction Fan and 65 MM Spacer)
Code 23DL (Suction Fan and 65MM Spacer)

5100-0179
5100-0938
5100-1124
5100-1126
5100-1192

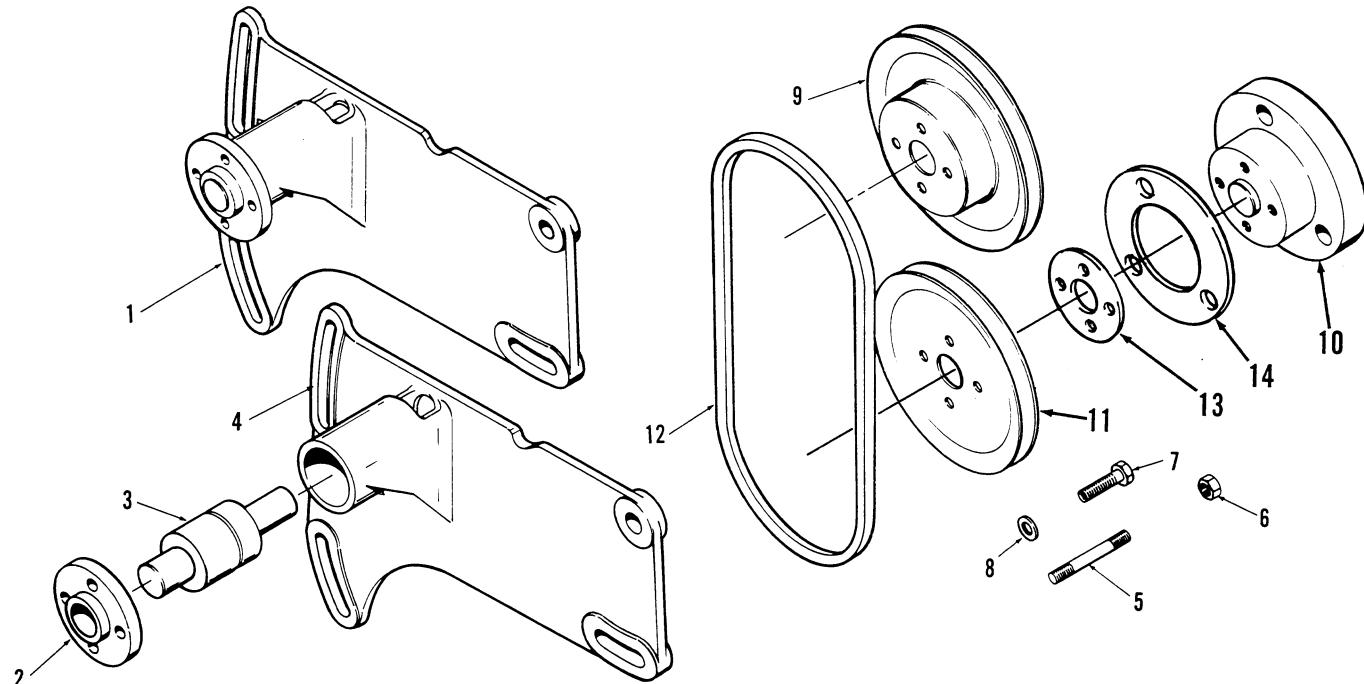


REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	FAN, COOLING 130-1925 130-2305 130-2951 130-3152	1	Code 23AH Code 23AU Code 23CZ Code 23DL
2	SPACER, FAN 130-1874 130-1873 130-1880 130-1876	1	Code 23AH Code 23AU Code 23CW Code 23CZ, 23DL
3	SCREW, CAP - HEX HEAD 718-1804 718-1803 718-1047 718-1043 800-2070	4	Code 23AH Use With Sheet Steel Pulley (M8 x 110 MM) Use With Cast Iron Pulley (M8 x 115 MM) Code 23AU (M8 x 75 MM) Code 23CW (M8 x 55 MM) Code 23CZ, 23DL (M8 x 85MM)
4	740-1006	4	Washer, Flat (M8)
5	526-0122	4	Washer, Flat (5/16") Code 23AH, 23AU

LOW FAN DRIVE

Code 23BK (1.07 Ratio)

5100-0420



XCS-1234

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	130-2137	1	Adapter Assembly, Fan (Includes Parts Marked*)
2	131-0297	1	*Hub, Fan
3	131-0321	1	*Bearing and Shaft, Fan
4	130-2139	1	*Bracket, Fan Support
5	520-2403	1	Stud (M8)
6	750-1006	1	Nut, Hex (M8)
7	SCREW, CAP - HEX HEAD 718-1806 718-1046 718-1035 720-1056 718-1036	1 2 4 3 4	M8 x 90 MM M8 x 70 MM M8 x 16 MM M10 x 35 MM M8 x 20 MM

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
8	WASHER, FLAT 526-2106 740-1006 740-1008	4 8 3	M8 M8 M10
9	131-0342	1	Pulley, Fan Drive
10	104-1483	1	Adapter, Low Fan Pulley
11	104-1447	1	Pulley, Low Fan Drive
12	511-0147-20	1	Belt, Drive
13	104-1637	1	Spacer, Pulley Alignment - Front (Begin Spec B)
14	104-1638	1	Spacer, Pulley Alignment - Rear (Begin Spec B)

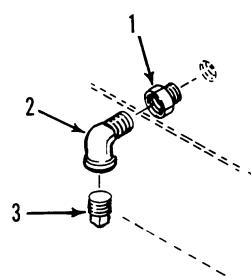
* - Parts Included in 130-2137 Adapter Assembly.

COOLANT HEATER CONNECTION

Code 23AW

5100-0671
5100-0672

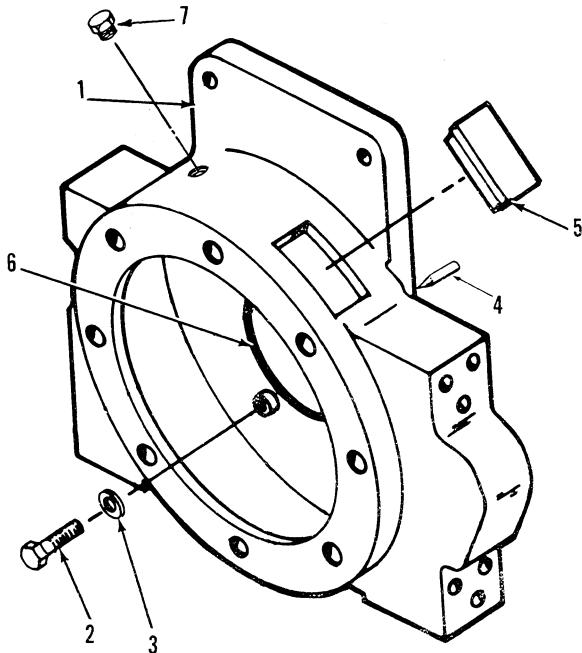
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	505-0017	1	Bushing
2	502-0156	1	Elbow, Street
3	502-0153	1	Plug, Brass



FLYWHEEL HOUSING

Code 27AA (SAE 5 Without Magnetic Pickup)
 Code 27AB (SAE 4 Without Magnetic Pickup)
 Code 27AC (SAE 3 Without Magnetic Pickup)
 Code 27AE (SAE 5 With One Magnetic Pickup - Metric Tapped)
 Code 27AF (SAE 4 With One Magnetic Pickup, 70° From Horizontal)
 Code 27AG (SAE 3 With One Magnetic Pickup)
 Code 27AH (SAE 4 With Two Magnetic Pickups)
 Code 27AN (SAE 4 With One Magnetic Pickup, 47° From Horizontal)
 Code 27AV (SAE 5 With One Magnetic Pickup - English Tapped)

5100-0214
5100-0974



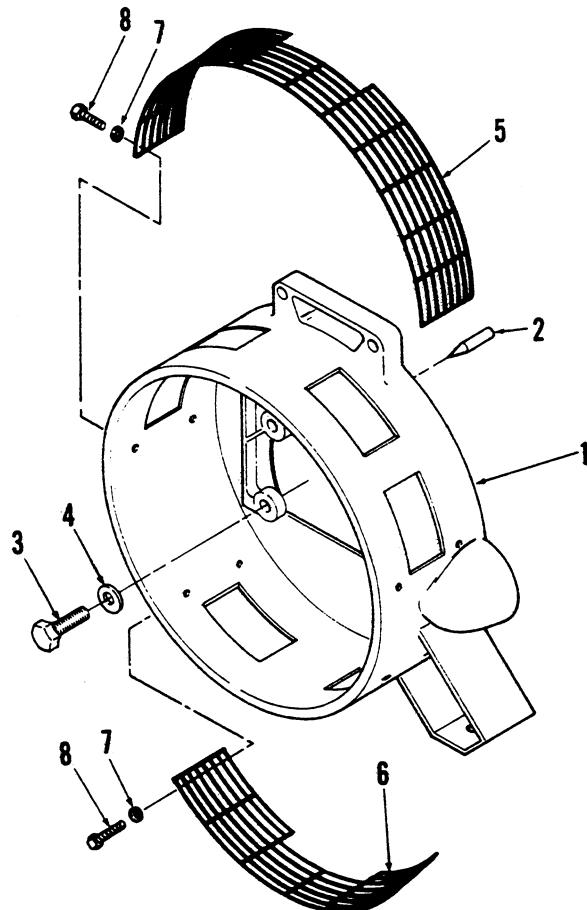
CS-1109

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	HOUSING, FLYWHEEL (Includes Seal and Indicator)		
	101-0719	1	Code 27AA
	101-0740-04	1	Code 27AB
	101-0714	1	Code 27AC
	101-0720	1	Code 27AE
	101-0740-01	1	Code 27AF
	101-0715	1	Code 27AG
	101-0740-03	1	Code 27AH
	101-0740-02	1	Code 27AN
	101-0698-03	1	Code 27AV
2	718-1078	6	Screw, Cap - Hex Head (M12 x 50 MM)
3	740-1801	6	Washer, Flat (M12)
4	160-1292	1	Indicator, Timing
5	101-0592	1	Plug, Timing Window
6	101-0630	1	Seal, Flywheel Housing
7	PLUG, CAP		
	517-0265	1	Code 27AE, 27AF, 27AG, 27AN (5/8-24)
	517-0265	2	Code 27AH (5/8-24)
	517-0259	1	Code 27AV (3/4-16)

GENERATOR ADAPTER

Code 27AJ

5100-1090

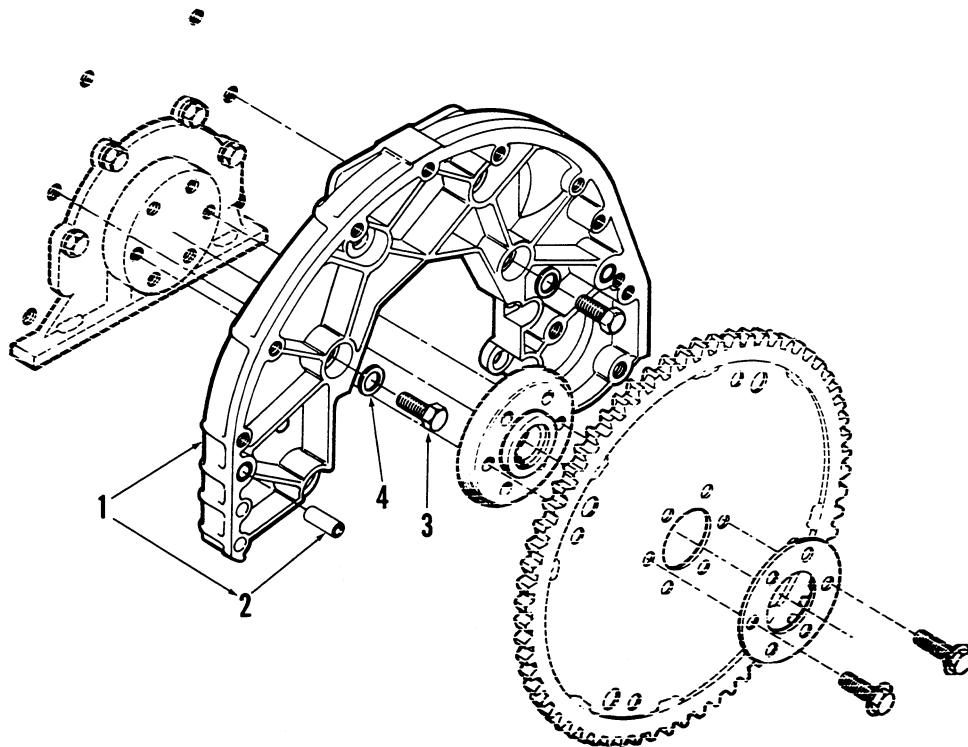


REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	231-0267	1	Adapter Assembly, Generator (Includes Timing Indicator)
2	160-1292	1	Indicator, Timing
3	718-1078	6	Screw, Cap - Hex Head (M12 x 50 MM)
4	740-1801	6	Washer, Flat (M12)
5	234-0689	1	Guard, Generator Fan - Upper
6	234-0690	1	Guard, Generator Fan - Lower
7	526-0022	8	Washer, Flat (5/16")
8	800-0029	8	Screw, Cap - Hex Head (5/16-18 x 1-1/8")

TRANSMISSION ADAPTER

Code 27AL

5100-0603

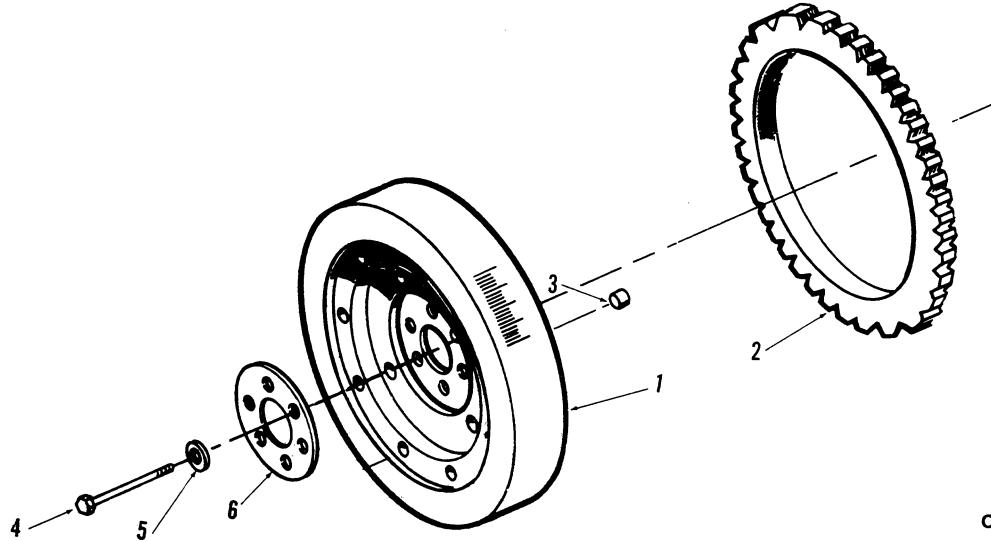


CT-1082

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	190-0622-02	1	Adapter Assembly, Transmission (Includes Dowel Pins)
2	516-0217	2	Pin, Dowel
3	718-1076	6	Screw, Cap - Hex Head (M12 x 40 MM)
4	740-1801	6	Washer, Flat (M12)

FLYWHEEL

Code 29AA (7.5" Over Center - SAE #5)	5100-0010
Code 29AD (10" Over Center - SAE #4)	5100-0051
Code 29AE (10" Flat Face - For Rockford Cover UCLA 10.00 TT - SAE #4)	5100-0052
Code 29AF (11" Flat Face - For Rockford Cover UCLA 11.00 RT - SAE #4)	5100-0090
Code 29AG (11.5" Over Center - SAE #3)	5100-0463
Code 29AH (12" Flat Face - For Rockford Cover UCLA 12.00 RT - SAE #3)	5100-0565
Code 29AK (Generator Application - SAE #500)	5100-0566
Code 29AL (9" Flat Face - For Rockford Cover UCLA 9.00 TT - SAE #5)	5100-0567
Code 29AT (Generator Application - SAE #5)	5100-0931



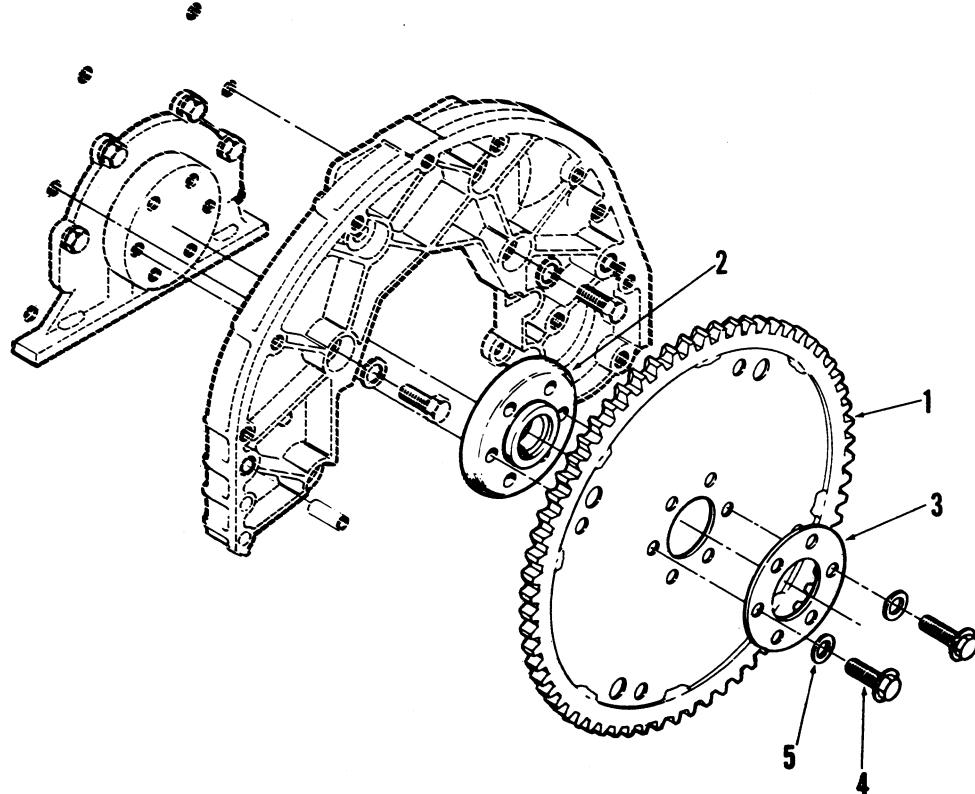
CS-1110

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	FLYWHEEL ASSEMBLY (Includes Ring Gear and Alignment Pin)		
	104-1504	1	Code 29AA
	104-1505	1	Code 29AD
	104-1388	1	Code 29AE
	104-1389	1	Code 29AF
	104-1506	1	Code 29AG
	104-1393	1	Code 29AH
	104-1503	1	Code 29AK
	104-1416	1	Code 29AL
	104-1462	1	Code 29AT
2	GEAR, RING	1	Code 29AA, 29AL, 29AT
	104-1169	1	Code 29AD, 29AE, 29AF, 29AK
	104-1185	1	Code 29AG, 29AH
3	104-1171	1	Pin, Alignment
4	SCREW, CAP - FLANGE HEX HEAD		
	720-1804	6	M10 x 38 MM - Code 29AA, 29AK, 29AL, 29AT
	720-1805	6	M10 x 45 MM - Code 29AD, 29AE, 29AF, 29AG, 29AH
5	740-1008	6	Washer, Flat (M10) - Code 29AA, 29AK, 29AL, 29AT
6	104-1036	1	Plate, Washer - Code 29AD, 29AE, 29AF, 29AG, 29AH

FLEXPLATE

Code 29AP (Automatic Transmission)

5100-0602

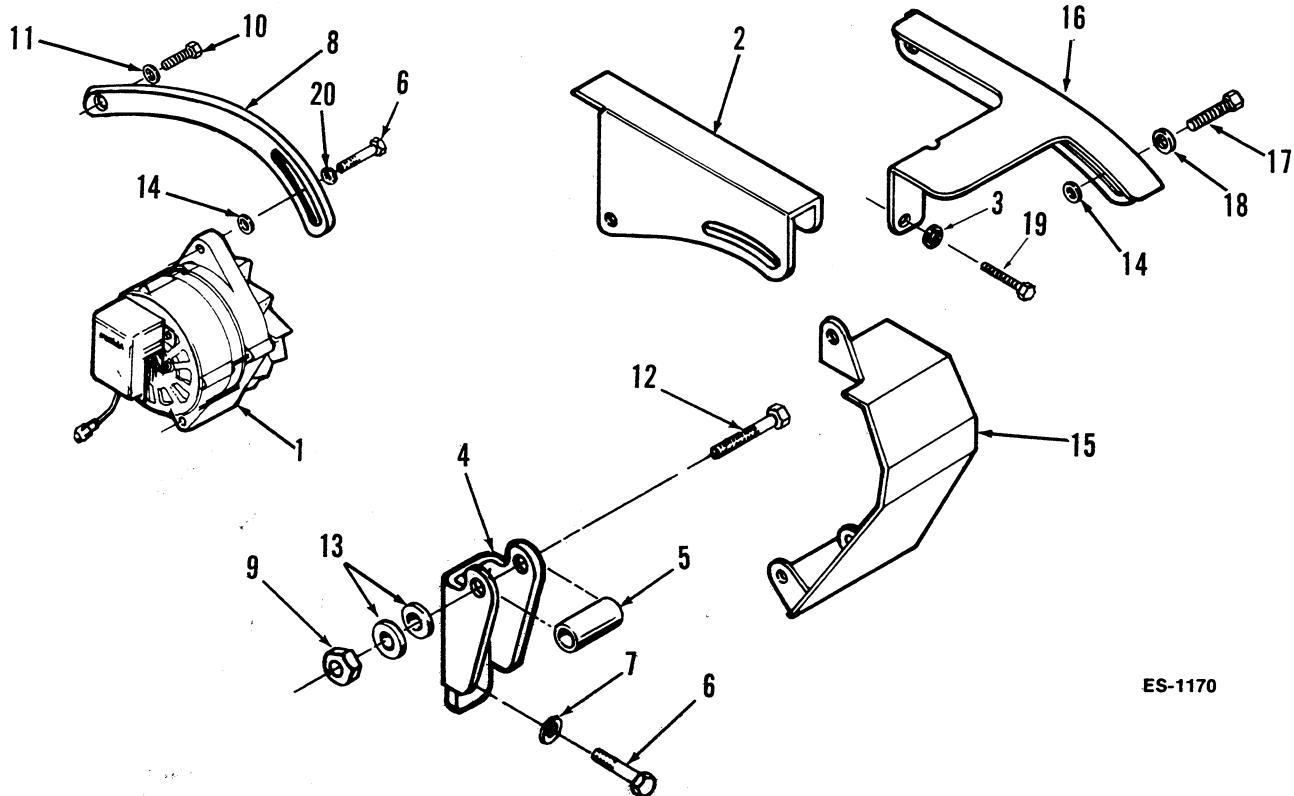


CT-1062-1

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	104-1574	1	Flexplate
2	104-1536	1	Hub, Flexplate
3	104-1497	1	Clamp, Flexplate
4	720-1804	6	Screw, Cap - Flange Hex Head (M10 x 38 MM)
5	740-1008	6	Washer, Flat (M10)

ALTERNATOR

Code 31AA (High Mount Accessory Side - 37 Amp, 12 Volt)
Code 31AB (Low Mount Accessory Side - 37 Amp, 12 Volt)
Code 31AC (High Mount Accessory Side - 62 Amp, 12 Volt)
Code 31AD (Low Mount Accessory Side - 62 Amp, 12 Volt)
Code 31AE (High Mount Accessory Side - No Alternator)
Code 31AF (Low Mount Accessory Side - No Alternator)
Code 31AL (High Mount Accessory Side - 72 Amp, 12 Volt)
Code 31AR (High Mount Accessory Side - 35 Amp, 24 Volt)
Code 31AU (Belt and Alternator Guard, High Mount Accessory Side)



ES-1170

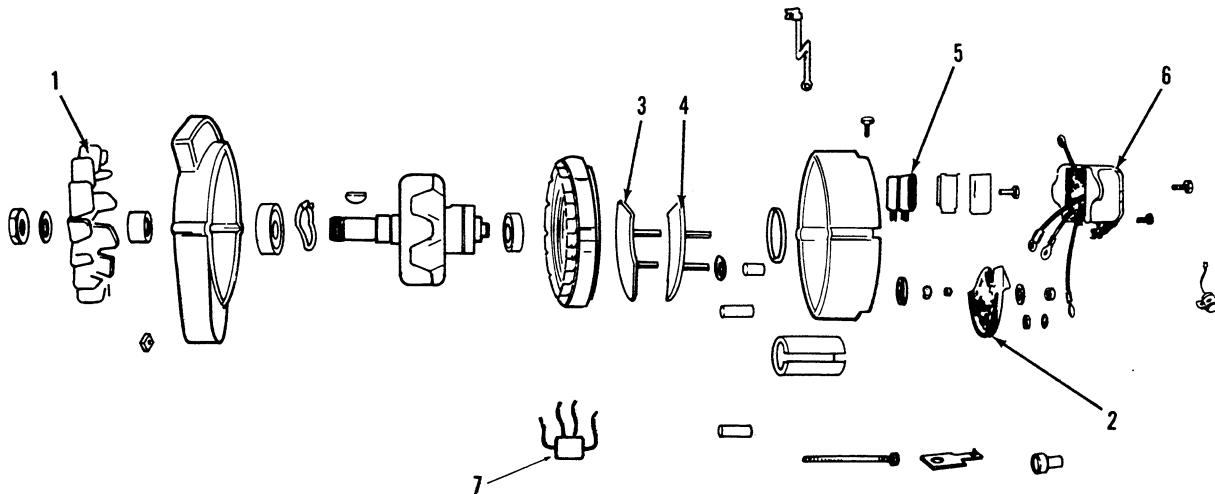
ALTERNATOR

Code 31AA (High Mount Accessory Side - 37 Amp, 12 Volt)	5100-0781
Code 31AB (Low Mount Accessory Side - 37 Amp, 12 Volt)	5100-0782
Code 31AC (High Mount Accessory Side - 62 Amp, 12 Volt)	5100-0784
Code 31AD (Low Mount Accessory Side - 62 Amp, 12 Volt)	5100-0785
Code 31AE (High Mount Accessory Side - No Alternator)	5100-0786
Code 31AF (Low Mount Accessory Side - No Alternator)	5100-0899
Code 31AL (High Mount Accessory Side - 72 Amp, 12 Volt)	5100-0948
Code 31AR (High Mount Accessory Side - 35 Amp, 24 Volt)	5100-1105
Code 31AU (Belt and Alternator Guard, High Mount Accessory Side)	

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	ALTERNATOR (See Separate Group for Components)			12	800-2100	1	Screw, Cap - Hex Head (M10 x 100MM)
	191-1525	1	Code 31AA, 31AB	13	526-2123	2	Washer, Flat (M10)
	191-1526	1	Code 31AC, 31AD	14	SPACER, ALTERNATOR STRAP		
	191-1600	1	Code 31AL		191-1322	1	Code 31AA, 31AB, 31AC, 31AD, 31AR
	191-1570	1	Code 31AR				Code 31AL
2	130-2784	1	Guard, Belt - Code 31AU	191-1322		1	Engines Without Low Fan Center Coolant Pump (Code 23CR)
3	740-1006	1	Washer, Flat (M8) Code 31AL	191-1759		1	Engines With Low Fan Center Coolant Pump (Code 23CR)
4	BRACKET, ALTERNATOR MOUNTING			15	191-1677	1	Guard, Alternator - Code 31AU
	191-1331	1	Code 31AA, 31AC, 31AE, 31AL, 31AR	16	STRAP, ALTERNATOR ADJUSTING - Code 31AL		
	191-1332	1	Code 31AB, 31AD, 31AF	191-1555		1	Engines Without Low Fan Center Coolant Pump (Code 23CR)
5	191-1321	1	Spacer, Alternator Bracket	191-1758		1	Engines With Low Fan Center Coolant Pump (Code 23CR)
6	SCREW, CAP - HEX HEAD		M8 x 25 MM	17	SCREW, CAP - HEX HEAD - Code 31AL		
	718-1037	5	Code 31AE, 31AF	718-1037		1	M8 x 25 MM - Engines Without Low Fan Center Coolant Pump (Code 23CR)
	718-1037	4	Code 31AA, 31AB, 31AC, 31AD, 31AL, 31AR	718-1038		1	M8 x 30 MM - Engines With Low Fan Center Coolant Pump (Code 23CR)
	800-2058	1	M8 x 25MM - Code 31AA, 31AB, 31AC, 31AD, 31AR	18	526-0122	1	Washer, Flat (5/16") Code 31AL
7	740-1006	4	Washer, Flat (M8)	19	718-1806	1	Screw, Cap - Hex Head (M8 x 90 MM)
8	STRAP, ALTERNATOR ADJUSTING						Code 31AL
	191-1365	1	Code 31AA, 31AC, 31AE, 31AR	20	526-2106	1	Washer, Flat (M8) Code 31AA, 31AB, 31AC, 31AD, 31AE, 31AF, 31AL, 31AR
	191-1312	1	Code 31AB, 31AD, 31AF				
9	860-2009	1	Nut, Hex (M10)				
10	SCREW, CAP - HEX HEAD		M8 x 20 MM				
	718-1036	1	Code 31AA, 31AC, 31AE				
	718-1036	2	Code 31AB, 31AD, 31AF				
	718-1037	1	M8 x 25 MM - Code 31AL, 31AR				
11	WASHER, FLAT (M8)						
	740-1006	1	Code 31AA, 31AB, 31AC, 31AD, 31AE, 31AF, 31AL, 31AR				

ALTERNATOR COMPONENTS

Code 31AA (High Mount Accessory Side - 37 Amp, 12 Volt)
 Code 31AB (Low Mount Accessory Side - 37 Amp, 12 Volt)
 Code 31AC (High Mount Accessory Side - 62 Amp, 12 Volt)
 Code 31AD (Low Mount Accessory Side - 62 Amp, 12 Volt)
 Code 31AL (High Mount Accessory Side - 72 Amp, 12 Volt)
 Code 31AR (High Mount Accessory Side - 35 Amp, 24 Volt)



NOTE: Component part numbers for 35 and 72 Amp Alternators not available at time of printing.

ES-1292

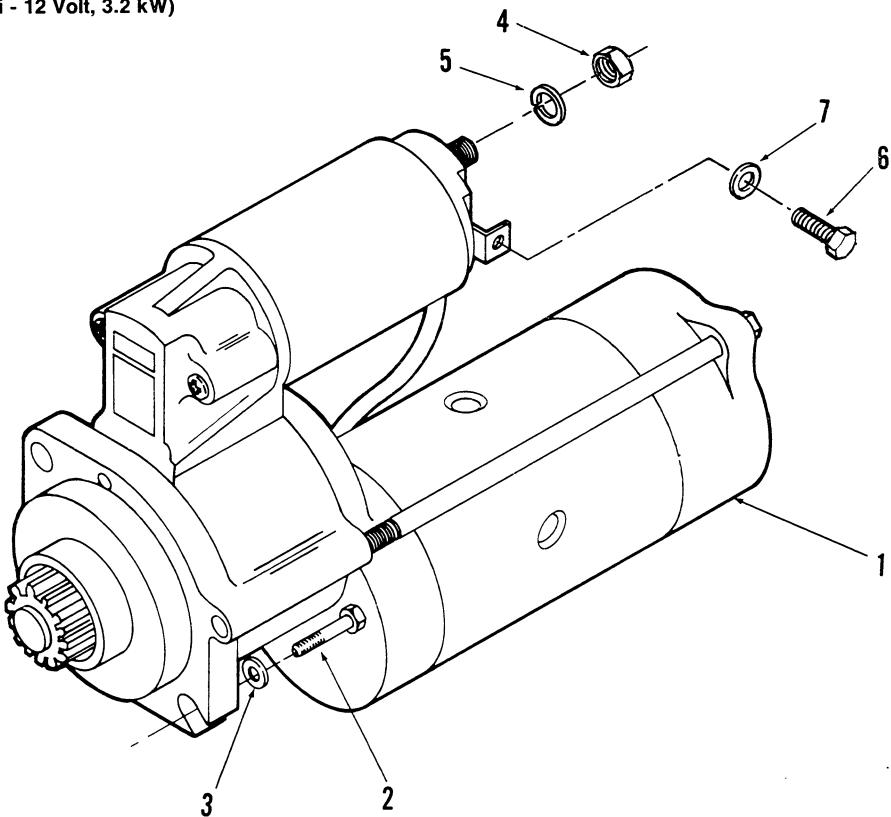
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
ALTERNATOR, COMPLETE			
191-1525	1	Code 31AA, 31AB - Used on Late Models - Has No Isolation Diodes on Back Side of Alternator (Replaces Early Models With Isolation Diode Assembly on Back side of Alternator)	
191-1526	1	Code 31AC, 31AD	
191-1600	1	Code 31AL	
191-1570	1	Code 31AR	
1 191-0943	1	Fan, Alternator	
2 191-1454	1	Diode Assembly, Isolation - Used on Early Models	
3 DIODE, RECTIFIER - NEGATIVE			
191-1453	1	Used on Early Models with Isolation Diode Assembly	
191-1560	1	Used on Late Models without Isolation Diode Assembly	

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
4	DIODE, RECTIFIER - POSITIVE		
	191-1452	1	Used on Early Models with Isolation Diode Assembly
	191-1559	1	Used on Late Models without Isolation Diode Assembly
5	BRUSH ASSEMBLY		
	191-0659	1	Used on Early Models with Isolation Diode Assembly
	191-1558	1	Used on Late Models without Isolation Diode Assembly
6	REGULATOR, VOLTAGE		
	191-1457	1	Used on Early Models with Isolation Diode Assembly
	191-1557	1	Used on Late Models without Isolation Diode Assembly
7	191-1556	1	Diode, Trio - Used on Late Models without Isolation Diode Assembly

STARTER

Code 33AA (Mitsubishi - 12 or 24 Volt, 2.6 kW)
 Code 33AM (Delco Remy)
 Code 33AU (Mitsubishi - 12 Volt, 3.2 kW)

5100-0082
 5100-0295
 5100-0411
 5100-1145

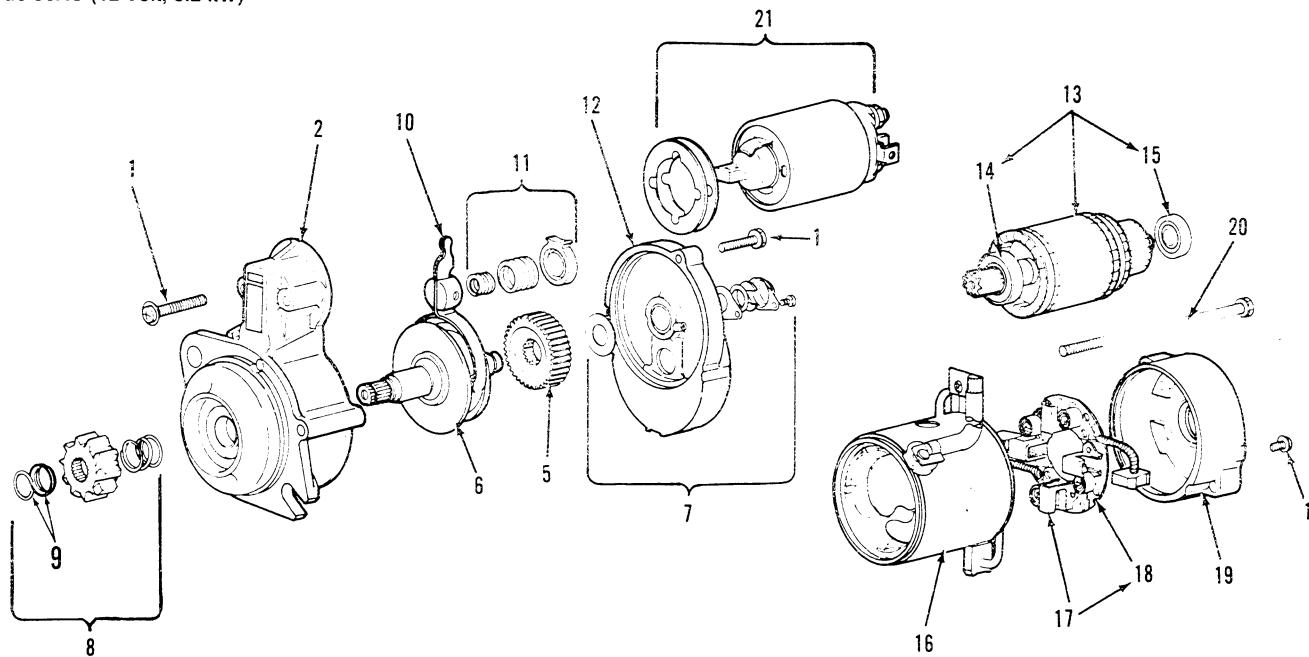


XES-1169

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	STARTER		Code 33AA, 33AU (Mitsubishi) Includes Switch Terminal Hardware (See Separate Group for Components) 12 Volt
	191-1394	1	Code 33AA
	191-1807	1	Code 33AU
	191-1550	1	24 Volt - Code 33AA
	191-1299	1	Code 33AM (Delco Remy) 12 Volt (Not Illustrated)
2	720-1806	2	Screw, Cap - Flanged Hex Head (M12 x 30 MM)
3	740-1010	2	Washer, Flat (M12)
4	860-2008	1	Nut, Hex (M8) B+ Terminal - Code 33AA, 33AU
5	850-2008	1	Washer, Lock - Spring (M8) B+ Terminal - Code 33AA, 33AU
6	718-1002	1	Screw, Cap - Hex Head (M5 x 8 MM) Solenoid Terminal - Code 33AA, 33AU
7	850-2005	1	Washer, Lock - Spring (M5) Solenoid Terminal - Code 33AA, 33AU

STARTER COMPONENTS (Mitsubishi)

Code 33AA (12 or 24 Volt, 2.6 kW)
Code 33AU (12 Volt, 3.2 kW)



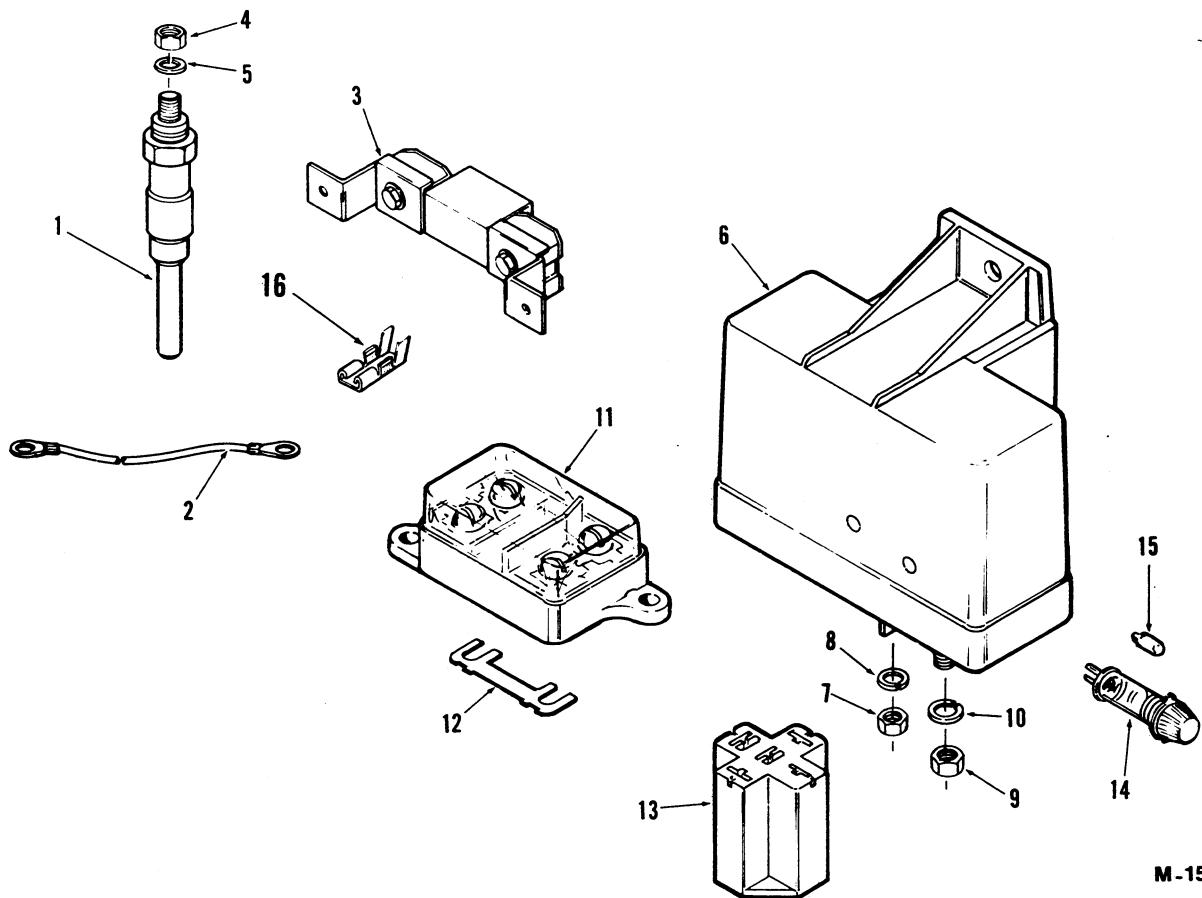
XES-1255

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
			STARTER (Complete)				
			12 Volt				12 Volt
	191-1394	1	Code 33AA		191-1437	1	Bearing, Center
	191-1807	1	Code 33AU		191-1436	1	Bearing, Rear
	191-1550	1	24 Volt - Code 33AA		16		YOKE ASSEMBLY (Includes Pole Shoes, Field Coil and Positive Brushes)
1	191-1450	1	Screw Set		191-1435	1	Code 33AA
2			BRACKET ASSEMBLY, FRONT (Includes Bearing)		191-1853	1	Code 33AU
	191-1449	1	12 Volt		191-1607	1	24 Volt - Code 33AA
	191-1605	1	24 Volt	17			HOLDER, BRUSH (Includes Negative Brushes)
5	191-1446	1	Gear		191-1434	1	12 Volt
6	191-1445	1	Clutch		191-1852	1	Code 33AA
7	191-1444	1	Cover Set (Includes Cover, Plate, Washers, Snap Ring, and Screws)		191-1608	1	Code 33AU
8	191-1443	1	Pinion Set (Includes Pinion, Spring, and Stopper Set)	18			24 Volt - Code 33AA
9	191-1442	1	Stopper Set (Includes Stopper and Ring)		191-1433	4	Code 33AA
10	191-1441	1	Lever Assembly		191-1851	4	Code 33AU
11	191-1440	1	Spring Set	19	191-1432	1	Bracket, Rear
12	191-1439	1	Bracket Assembly, Center	20			BOLT SET
13	ARMATURE ASSEMBLY (Includes Bearings)		12 Volt		191-1431	1	Code 33AA
					191-1850	1	Code 33AU
	191-1438	1	Code 33AA	21			SWITCH ASSEMBLY
	191-1854	1	Code 33AU		191-1430	1	12 Volt
	191-1606	1	24 Volt - Code 33AA		191-1609	1	24 Volt

GLOW PLUG

Code 33AD (12 Volt 20 Second Glow Plugs, Lead and Ballast Resistor)
 Code 33AE (12 Volt 7 Second Glow Plugs, Lead and Control)
 Code 33AG (24 Volt 60 Second Glow Plugs, Lead and Ballast Resistor)
 Code 33AN (12 Volt 20 Second Glow Plugs and Lead)
 Code 33AR (12 Volt 7 Second Glow Plugs and Lead)

5100-0177
 5100-0315
 5100-0343
 5100-0543
 5100-0629

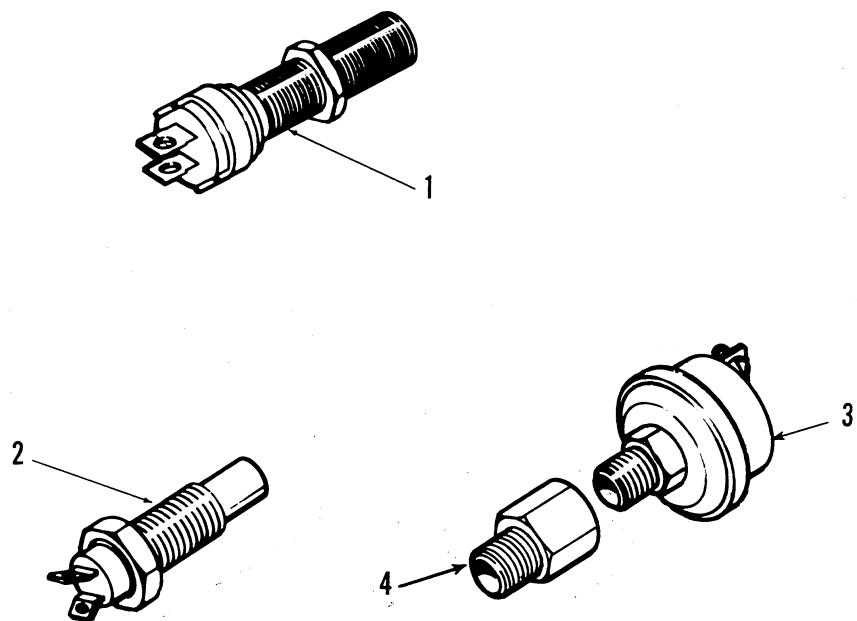


REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	PLUG, GLOW 333-0195 333-0220 333-0226	6	Code 33AD, 33AN Code 33AE, 33AR Code 33AG	7	750-1002	1	Nut, Hex (M5) - Code 33AE
2	336-4131	5	Lead, Glow Plug	8	850-2005	1	Washer, Lock-Spring (M5) - Code 33AE
3	RESISTOR, BALLAST 333-0198 333-0234	1	Code 33AD Code 33AG	9	750-1004	1	Nut, Hex (M6) - Code 33AE
4	750-1002	6	Nut, Hex (M5)	10	850-2006	1	Washer, Lock-Spring (M6) - Code 33AE
5	850-2005	6	Washer, Lock - Spring (M5)	11	321-0263	1	Holder, Fuse - Code 33AE
6	333-0245	1	Controller, Glow Plug - Code 33AE	12	321-0262-01	1	Fuse, Strip (80 Ampere) - Code 33AE
				13	307-1690	1	Plug, Harness - Code 33AE
				14	322-0354	1	Light, Indicator - Code 33AE
				15	322-0353	1	Lamp, Indicator - Code 33AE
				16	332-1497	4	Connector, Terminal - Code 33AE

SWITCHES

Code 35AC (Low Oil Pressure and High Water Temperature Switches)
Code 35AE (Magnetic Speed Sensor)

5100-0261
5100-0340
5100-0920



M-1489

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	150-1925	1	Sensor, Speed - Magnetic - Code 35AE
2	309-0482	1	Switch, High Water Temperature - Code 35AC
3	309-0177	1	Switch, Low Oil Pressure - Code 35AC
4	502-0944	1	Adapter - Code 35AC (Not Required on All Engines)

FRONT ENGINE MOUNT

Code 41AA (Single Point)

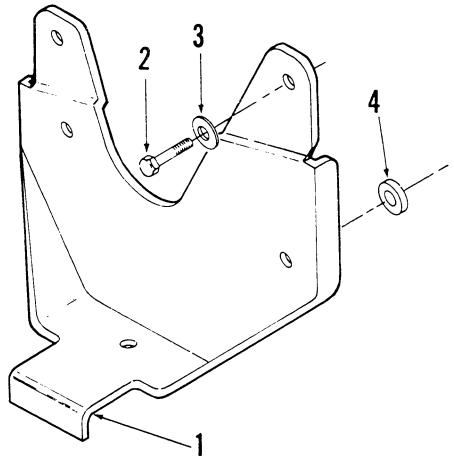
5100-0065

Code 41AB (Rigid Four Point - With Radiator Support Arms)

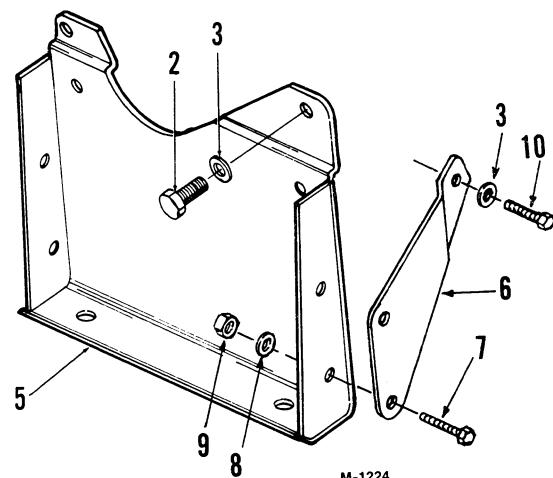
5100-0620

Code 41AH (Rigid Four Point - Without Radiator Support Arms)

5100-1034



M-1548



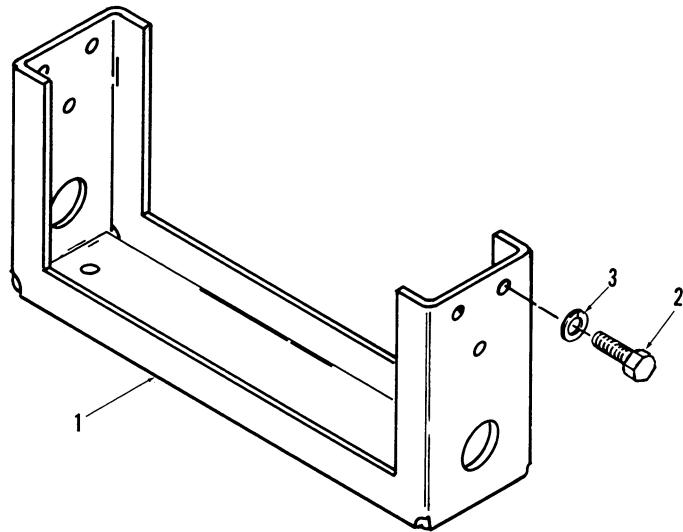
M-1224

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	403-1925	1	Bracket, Mount - Code 41AA
2	SCREW, CAP - HEX HEAD 718-1086 718-1802	2	M12 x 90 MM (Top) M12 x 95 MM (Bottom)
3	WASHER, FLAT (M12) 740-1010 740-1010	4	Code 41AA Code 41AH
4	403-1932	2	Spacer, Bracket Mounting - Code 41AA
5	BRACKET, MOUNT 403-2210 403-2033	1	Code 41AB Code 41AH
6	SUPPORT - Code 41AH 130-2797 130-2798	1	Right Hand Left Hand
7	718-1074	4	Screw, Cap - Hex Head (M12 x 30 MM) Code 41AH
8	850-2012	4	Washer, Lock (M12) Code 41AH
9	750-1010	4	Nut, Hex (M12) Code 41AH
10	718-1073	2	Screw, Cap - Hex Head (M12 x 25 MM) Code 41AH

REAR ENGINE MOUNT

Code 41AB
Code 41AH

5100-0198
5100-0207
5100-0311



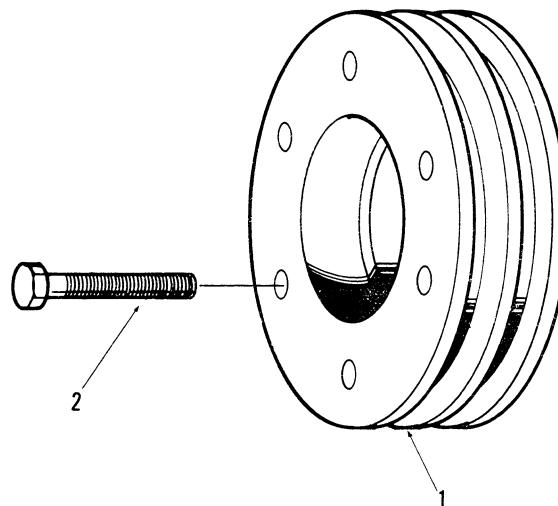
M-1224

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	BRACKET, REAR HOUSING 403-2036	1	Code 41AB For Engines With SAE #3 Flywheel Housing (Option Code 27AC, 27AG)
	403-1973	1	For Engines With SAE #4 Flywheel Housing (Option Code 27AB, 27AF, 27AN)
	403-1952	1	For Engines With SAE #5 Flywheel Housing (Option Code 27AA, 27AE)
	403-1973	1	Code 41AH For Engines With SAE #4 Flywheel Housing (Option Code 27AB, 27AF, 27AN)
2	718-1073	6	Screw, Cap - Hex Head (M12 x 25 MM)
3	850-2012	6	Washer, Lock - Spring (M12)

CRANKSHAFT PULLEY

Code 45AB (Double Groove)

5100-0167



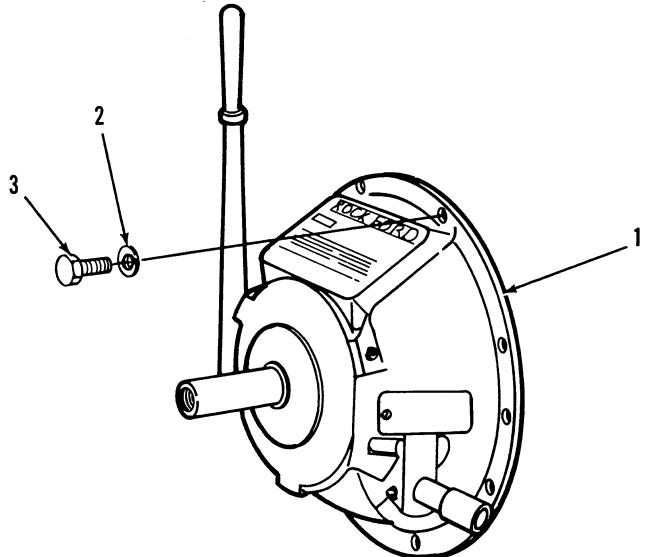
CT-1042

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	104-1374	1	Pulley, Crankshaft
2	720-1064	6	Screw, Cap - Hex Head (M10 x 75 MM)

CLUTCH

Code 45AC (7.5" Over Center)
 Code 45AD (10.0" Over Center)
 Code 45AE (11.5" Over Center)
 Code 45AH (10.0" Over Center, In-Line)

5100-0180
 5100-0181
 5100-0182
 5100-0354



M-1344

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	CLUTCH ASSEMBLY, POWER TAKE-OFF		
	190-0541	1	Code 45AC
	190-0594	1	Code 45AD
	190-0595	1	Code 45AE
	190-0598	1	Code 45AH
2	WASHER, FLAT (Hardened)		
	740-1006	8	M8 - Code 45AC
	740-1008	8	M10 - Code 45AC
	740-1008	20	M10 - Code 45AD, 45AE, 45AH
3	SCREW, CAP - HEX HEAD		
	718-1038	8	M8 x 30 MM - Code 45AC
	718-1054	8	M10 x 25 MM - Code 45AC
	718-1054	12	M10 x 25 MM - Code 45AD, 45AE, 45AH
	718-1056	8	M10 x 35 MM - Code 45AD, 45AE, 45AH

NOTE: For component parts contact manufacturer shown on nameplate.

PAINT AND THREAD SEALANT

PART NO.	QTY. USED	PART DESCRIPTION
525-0454		Paint, Greige (13 oz. Pressurized Spray Can)
518-0452		Sealant, Thread (50 cc Bottle)

POWER UNIT SECTION

This section contains replacement parts for the Power Unit as listed by Sales Option Code number on the radiator shroud nameplate.

MODEL IDENTIFICATION LABEL

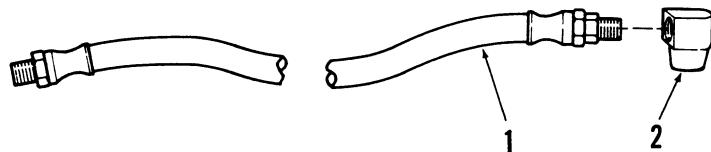


For handy reference, insert your radiator shroud nameplate and Sales Option Code information in the spaces above.

FLEXIBLE FUEL LINE

Code 15AF

5100-0515



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	501-0002	1	Line, Flexible Fuel (7")
2	502-0041	1	Elbow, Male

AIR CLEANER (SPEC A)

Code 19AB (Medium Duty, Single Stage, Unhoused Mounted)

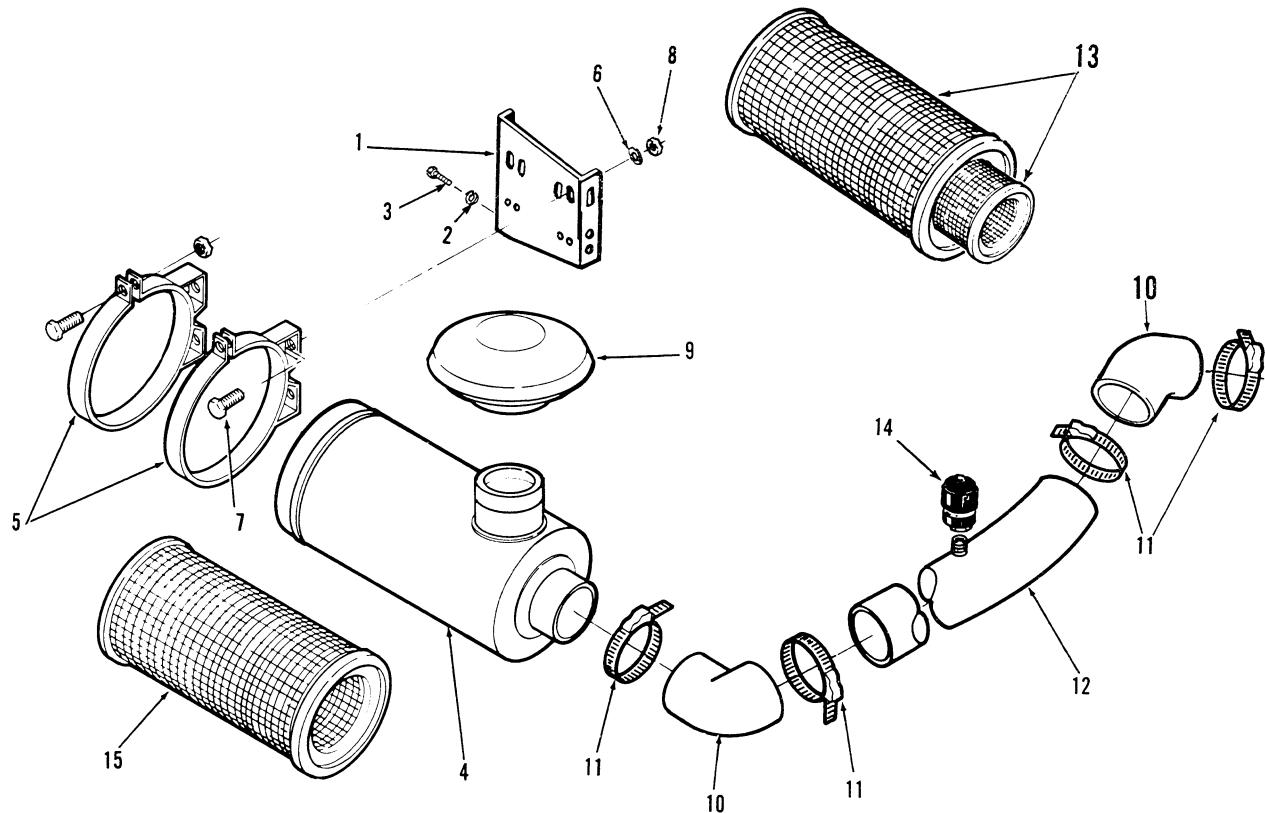
5100-0186

(Medium Duty, Single Stage, Housed, Not Mounted)

5100-0188

Code 19AC (Heavy Duty, Dual Stage, Not Mounted)

5100-0202



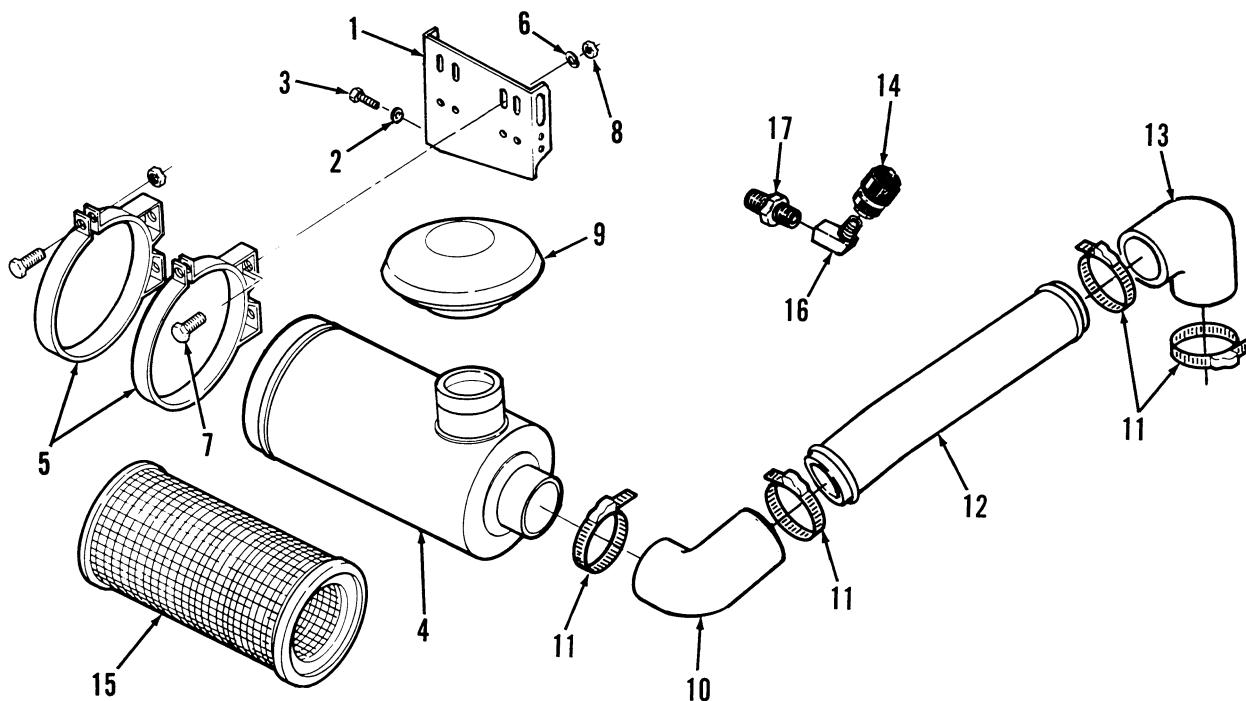
XFS-1383

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	140-1772	1	Bracket, Air Cleaner Mounting - Code 19AB	8	750-1006	4	Nut, Hex (M8) - Code 19AB - Mounted
2	740-1010	1	Washer, Flat - Hardened (M12) - Code 19AB	9	HOOD, AIR INLET		
3	718-1073	1	Screw, Cap - Hex Head (M12 x 25 MM) - Code 19AB	10	140-1435	1	Code 19AB
4	CLEANER, AIR (Includes Element)			10	140-1575	1	Code 19AC
	140-1794	1	Code 19AB	11	140-1775	2	Elbow, 90° - Code 19AB
	140-1555	1	Code 19AC	11	503-0354	4	Clamp, Hose - Code 19AB
5	140-0317	2	Band, Air Cleaner	12	140-1802	1	Unhoused
6	WASHER (M8) Code 19AB			12	140-1793	1	Housed
	740-1006	4	Flat - Hardened - Mounted	13	140-1791	1	Element, Air Cleaner - Code 19AC
	850-2008	4	Lock - Not Mounted	13	140-1619	1	Primary
7	SCREW, CAP - HEX HEAD - Code 19AB			13	140-1620	1	Secondary
	718-1036	4	M8 x 20 MM - Mounted	14	140-1791	1	Indicator, Service - Code 19AB - Unhoused
	718-1034	4	M8 x 14 MM - Not Mounted	15	140-1455	1	Element, Air Cleaner - Code 19AB

AIR CLEANER (SPEC C)

Code 19AB (Medium Duty, Single Stage, Engine Mounted, Unhoused)

5100-0531



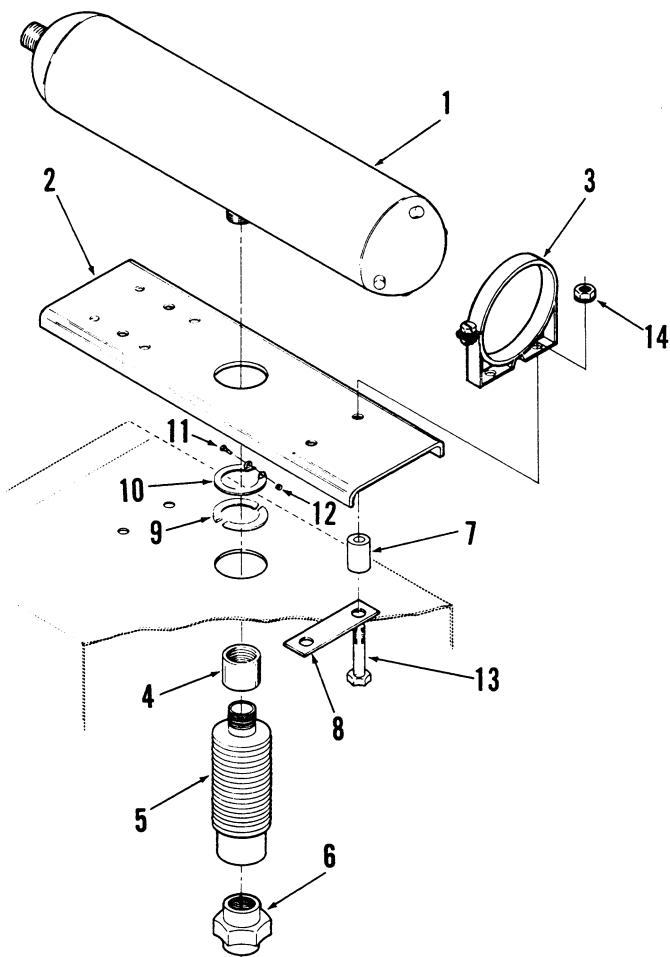
XFS-1383

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	140-1772	1	Bracket, Air Cleaner Mounting
2	526-2148	1	Washer, Flat - Hardened (M12)
3	800-2111	1	Screw, Cap - Hex Head (M12 x 25 MM)
4	140-1794	1	Cleaner, Air (Includes Element)
5	140-0317	2	Band, Air Cleaner
6	526-2103	4	Washer, Flat-Hardened (M8)
7	800-2057	4	Screw, Cap - Hex Head (M8 x 20 MM)
8	860-2008	4	Nut, Hex (M8)
9	140-1435	1	Hood, Air Inlet
10	503-1222	1	Elbow, 90°
11	503-0354	4	Clamp, Hose
12	140-1991-01	1	Tube, Air Inlet
13	503-1406	1	Elbow, 90°
14	140-1791	1	*Indicator, Service
15	140-1455	1	Element, Air Cleaner
16	502-0020	1	*Elbow, 90° (1/8")
17	502-0082	1	*Nipple, Hex-Pipe (1/8")

* - Intake Manifold Mounted

MUFFLER

Code 19AM (Housed)



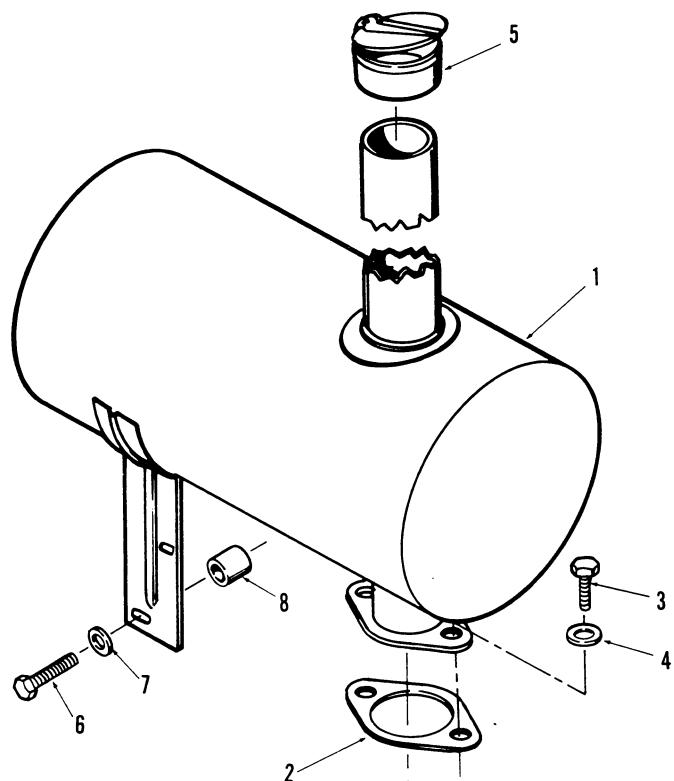
XES-1116-1

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	155-0988	1	Muffler
2	155-0978	1	Shield, Heat
3	140-0649	2	Band, Mounting
4	505-0203	1	Coupling (2")
5	155-2066	1	Tube, Exhaust
6	505-0454	1	Union (2")
7	155-1430	4	Spacer
8	370-0072	2	Strip, Reinforcing
9	895-0157	1	Strip, Asbestos
10	155-1420	1	Shield, Rain
11	813-0105	2	Screw, Machine - Round Head (10-32 x 1")
12	870-0188	2	Nut, Locking (10-32)
13	800-0037	4	Screw, Cap - Hex Head (5/16-18 x 3")
14	870-0048	4	Nut, Locking (5/16-18)

MUFFLER

Code 21AC (Horizontal)

5100-0372



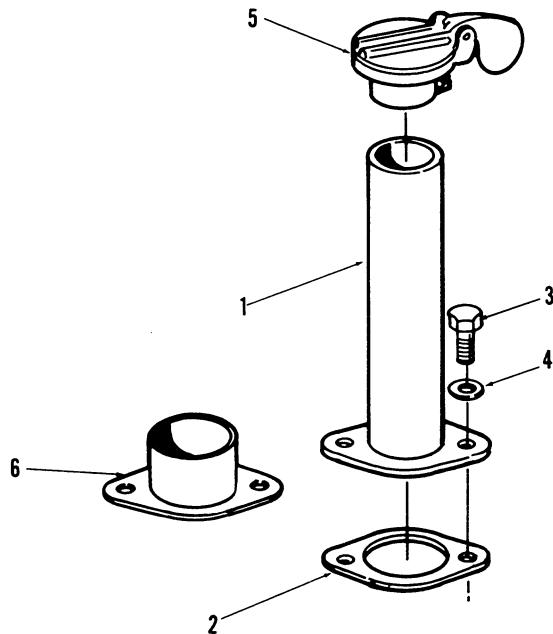
XS-1091

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	155-1967	1	Muffler, Exhaust
2	155-1920	1	Gasket, Muffler Mounting
3	718-1054	2	Screw, Cap - Hex Head (M10 x 25 MM)
4	740-1008	2	Washer, Flat (M10)
5	155-0986	1	Cap, Rain
6	718-1807	2	Screw, Cap - Hex Head - (M8 x 95 MM)
7	850-2008	2	Washer, Flat (M8)
8	155-1964	2	Spacer, Muffler Brace

EXHAUST PIPE

Code 21AD (With Rain Cap)
Code 21AG (Exhaust Flange)
Code 21AJ (Gasket Only)

5100-0190
5100-0285
5100-0338



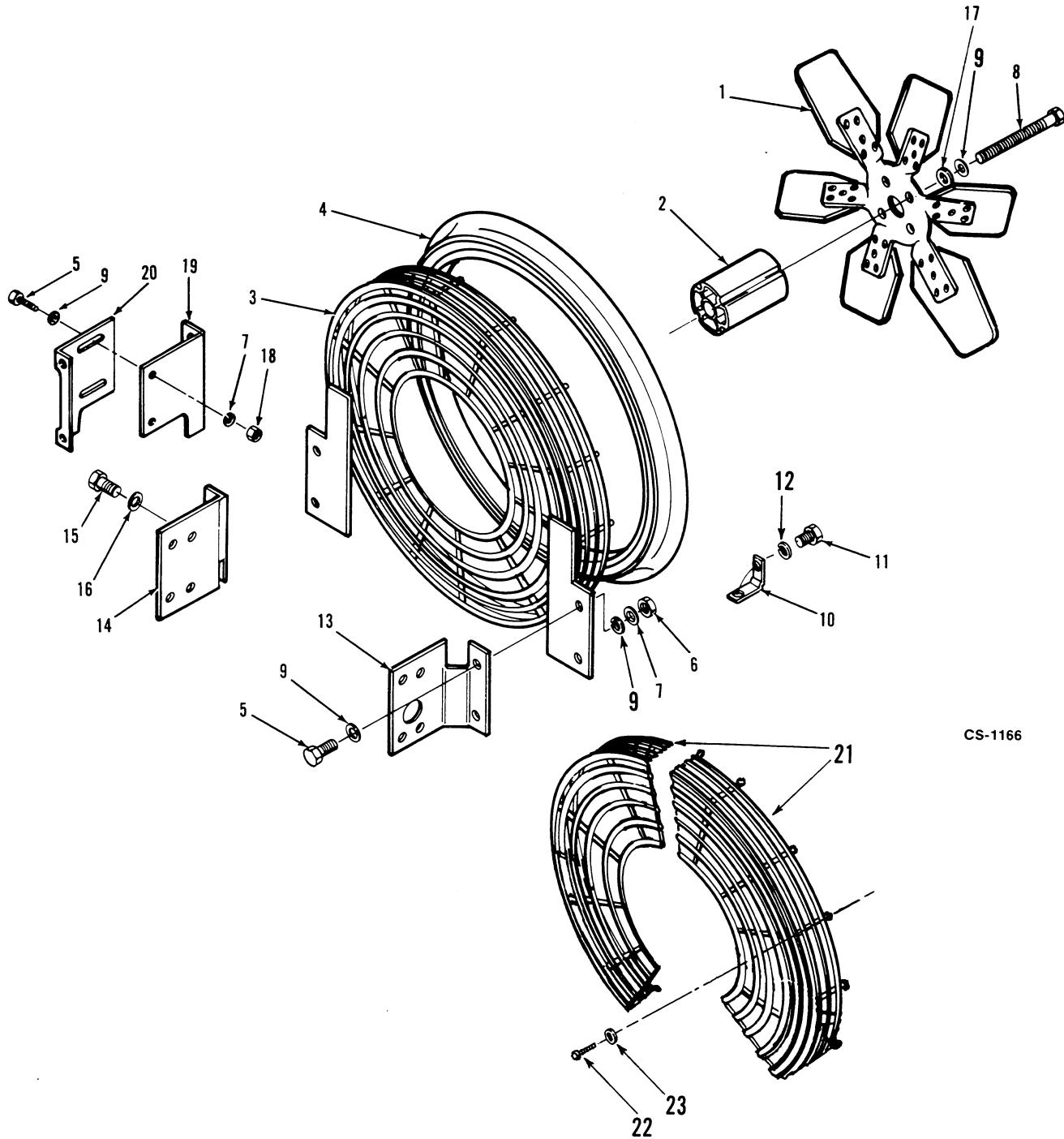
EXS-1065

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	155-1919	1	Pipe, Exhaust - Code 21AD
2	155-1920	1	Gasket
3	718-1054	2	Screw, Cap - Hex Head (M10 x 25 MM) Code 21AD, 21AG
4	740-1008	2	Washer, Flat (M10) Code 21AD, 21AG
5	155-0985	1	Cap, Rain - Code 21AD
6	155-1916	1	Flange, Exhaust - Code 21AG

COOLING SYSTEM - FAN

Code 23AH (Suction Fan and 89 MM Spacer)
 Code 23AJ (Suction Fan and 89 MM Spacer)
 Code 23BM (Blower Fan and 89 MM Spacer)
 Code 23BN (Blower Fan and 89 MM Spacer)
 Code 23CA (Suction Fan and 89 MM Spacer)

5100-0179
 5100-0203
 5100-0564
 5100-0666
 5100-0921
 5100-1108



COOLING SYSTEM - FAN

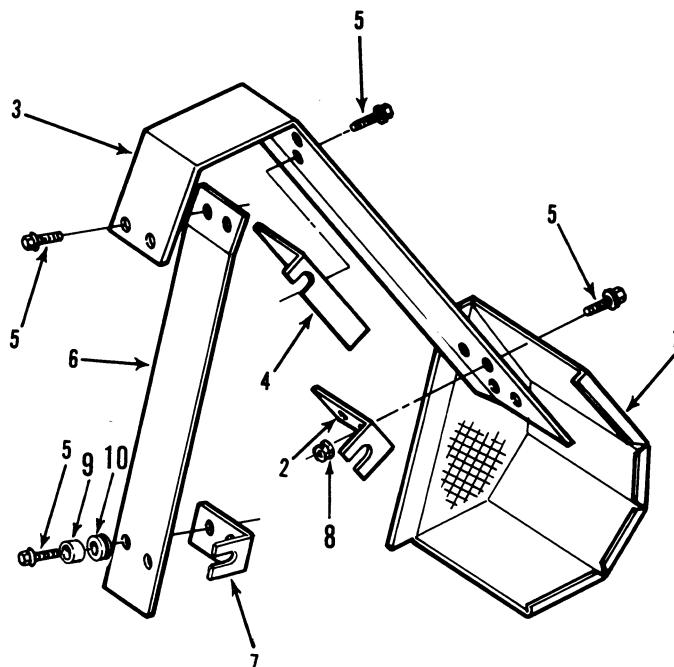
Code 23AH (Suction Fan and 89 MM Spacer)	5100-0179
Code 23AJ (Suction Fan and 89 MM Spacer)	5100-0203
Code 23BM (Blower Fan and 89 MM Spacer)	5100-0564
Code 23BN (Blower Fan and 89 MM Spacer)	5100-0666
Code 23CA (Suction Fan and 89 MM Spacer)	5100-0921
	5100-1108

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	FAN, COOLING			12	850-2005	1	Washer, Lock-Spring (M5) - Code 23AJ, 23BN
	130-1925	1	Code 23AH, 23AJ, 23CA	13	130-2004	1	Bracket, Fan Guard - RH - Code 23AJ, 23BN
	130-1922	1	Code 23BM, 23BN	14	130-2005	1	Bracket, Fan Guard - LH - Engines Without Front PTO - Code 23AJ, 23BN
2	130-1874	1	Spacer, Fan	15	718-1036	4	Screw, Cap - Hex Head (M8 x 20 MM) - Code 23AJ, 23BN
3	130-2030	1	Guard, Fan - Code 23AJ, 23BN	16	740-1006	4	Washer, Flat (M8) - Code 23AJ, 23BN
4	130-1962	1	Shroud, Fan - Code 23AJ, 23BN	17	WASHER, FLAT - Code 23AJ 526-0122	4	89 MM Spacer and Cast Iron Pulley
5	SCREW, CAP - HEX HEAD (M8 x 20 MM) Code 23AJ, 23BN			740-1006		4	89 MM Spacer and Sheet Steel Pulley
	718-1036	4	Engines Without Front PTO	18	860-2008	2	Nut, Hex (M8 x 1.25) Engines With Front PTO - Code 23AJ, 23BN
	718-1036	6	Engines With Front PTO	19	130-2470	1	Support, Fan Guard - Engines With Front PTO - Code 23AJ, 23BN
6	750-1006	4	Nut, Hex (M8) Code 23AJ, 23BN	20	130-2471	1	Bracket, Fan Guard - Engines With Front PTO - Code 23AJ, 23BN
7	WASHER, LOCK-SPRING (M8) Code 23AJ, 23BN			21	GUARD, FAN - Code 23BM, 23CA 130-2461	1	Left Hand
	850-2008	4	Engines Without Front PTO	130-2460		1	Right Hand
	850-2008	6	Engines With Front PTO	22	SCREW 718-1018	8	Cap - Hex Head (M6 x 12 MM) Code 23BM, 23CA
8	SCREW, CAP - HEX HEAD Code 23AJ			821-2033		8	Locking - Hex Washer Head (M6 x 16 MM) Code 23BN in Spec C
	718-1804	4	M8 x 110 MM (89 MM Spacer and Sheet Steel Pulley)	23	850-2006	8	Washer, Lock - Spring (M6) Code 23BM, 23CA
	718-1803	4	M8 x 115 MM (89 MM Spacer and Cast Iron Pulley)				
	718-1804	4	Code 23AH, 23BM, 23BN, 23CA (M8 x 110 MM)				
9	WASHER						
	740-1006	8	Code 23AJ, 23BN in Spec A Engines Without Front PTO (Flat - M8)				
	740-1006	10	Engines With Front PTO (Flat - M8)				
	850-2008	4	Code 23AH, 23BM, 23BN in Spec C, 23CA (Lock - Spring - M8)				
10	130-2085	1	Clip, Pan - Shroud - Code 23AJ, 23BN				
11	718-1005	1	Screw, Cap - Hex Head (M5 x 14 MM) - Code 23AJ, 23BN				

BELT GUARD

Code 23BM (Belt Guard - Low Alternator)
Code 23CA (Belt Guard - Low Alternator)

5100-0663
5100-0851



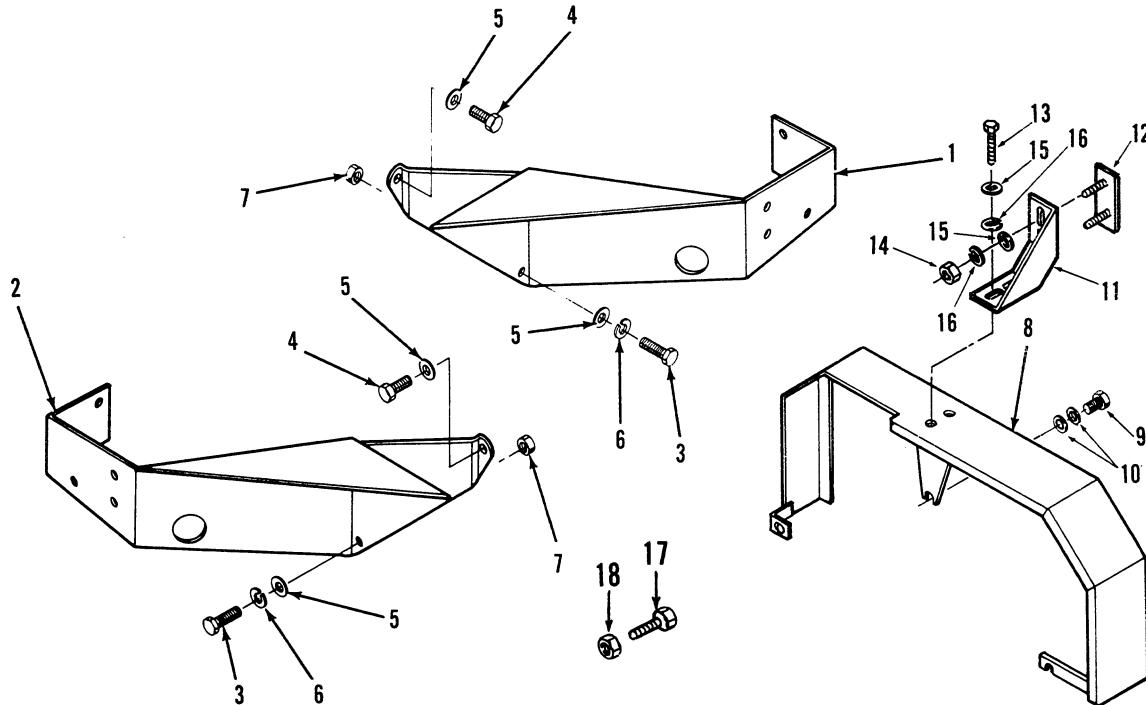
M-1595

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	191-1539	1	Guard, Alternator Belt
2	BRACKET, BELT GUARD 191-1543 191-1593	1	Code 23BM Code 23CA
3	GUARD, ALTERNATOR BELT 191-1540 191-1579	1	Code 23BM Code 23CA
4	BRACKET, BELT GUARD 191-1542 191-1580	1	Code 23BM Code 23CA
5	SCREW, LOCKING HEAD 821-0010 821-0010 821-2032 821-2033	10	1/4-20 x 1/2" Code 23BM Code 23CA M6 x 12 MM - Code 23CA M6 x 16 MM - Code 23CA
6	GUARD, ALTERNATOR BELT 191-1546 191-1577	1	Code 23BM Code 23CA
7	BRACKET, ALTERNATOR BELT 191-1547 191-1590	1	Code 23BM Code 23CA
8	870-2054	2	Nut, Locking Flange (M6) - Code 23CA
9	402-0546	3	Insert, Isolator - Code 23CA
10	508-0248	3	Grommet - Code 23CA

BELT GUARD AND RADIATOR SUPPORTS (SPEC A)

Code 23AJ
Code 23BN

5100-0196
5100-0206



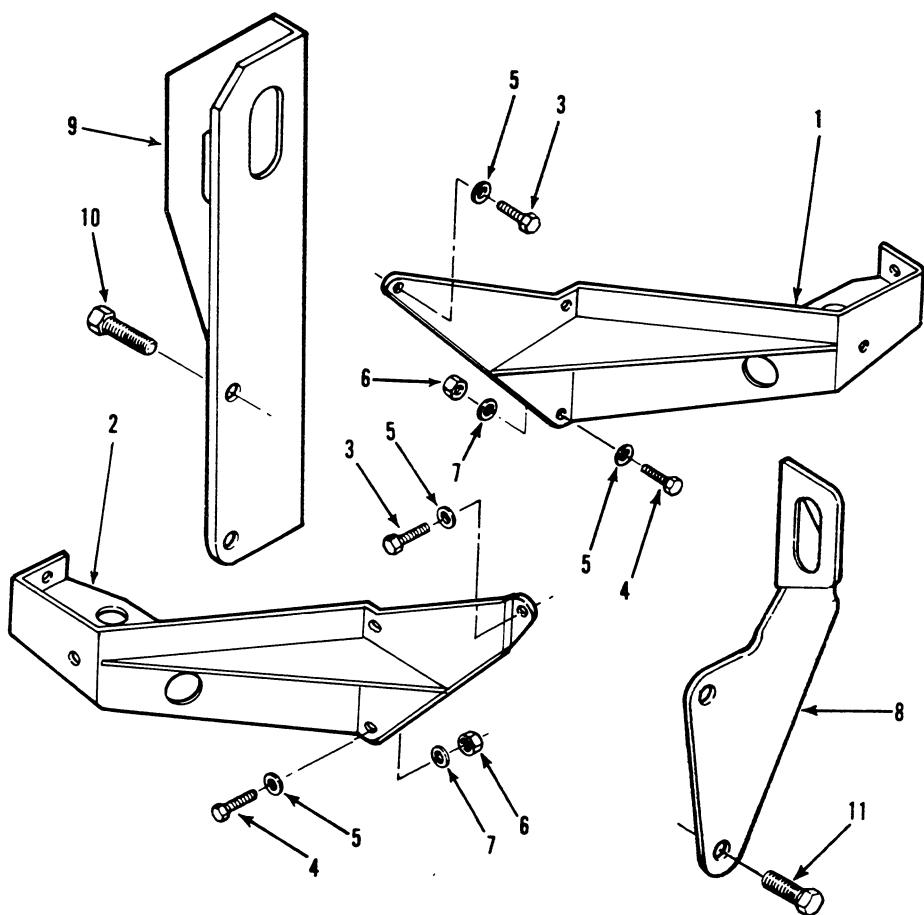
M-13

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	130-2019	1	Support, Radiator - RH
2	130-2022	1	Support, Radiator - LH
3	718-1074	4	Screw, Cap - Hex Head (M12 x 30 MM)
4	718-1072	2	Screw, Cap - Hex Head (M12 x 20 MM)
5	740-1010	6	Washer, Flat (M12)
6	850-2012	4	Washer, Lock - Spring (M12)
7	750-1010	4	Nut, Hex (M12)
8	130-1993	1	Guard, Belt
9	718-1047	1	Screw, Cap - Hex Head (M8 x 75 MM)
10	740-1006	2	Washer, Flat (M8)
11	130-2192	1	Support, Belt Guard
12	130-2210	1	Plate, Fan Guard Support
13	718-1020	2	Screw, Cap - Hex Head (M6 x 16 MM)
14	750-1004	2	Nut, Hex (M6)
15	526-0018	4	Washer, Flat (M6)
16	850-2006	4	Washer, Lock-Spring (M6)
17	718-1035	1	Screw, Cap - Hex Head (M8 x 16 MM)
18	740-1006	1	Washer, Flat (M8)

RADIATOR SUPPORTS (SPEC A)

Code 23BM
Code 23CA

5100-0668

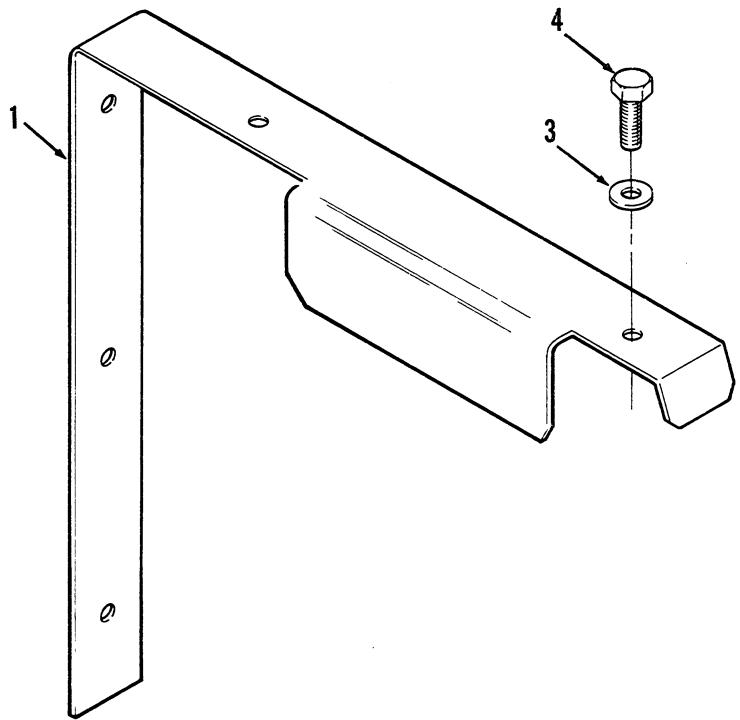
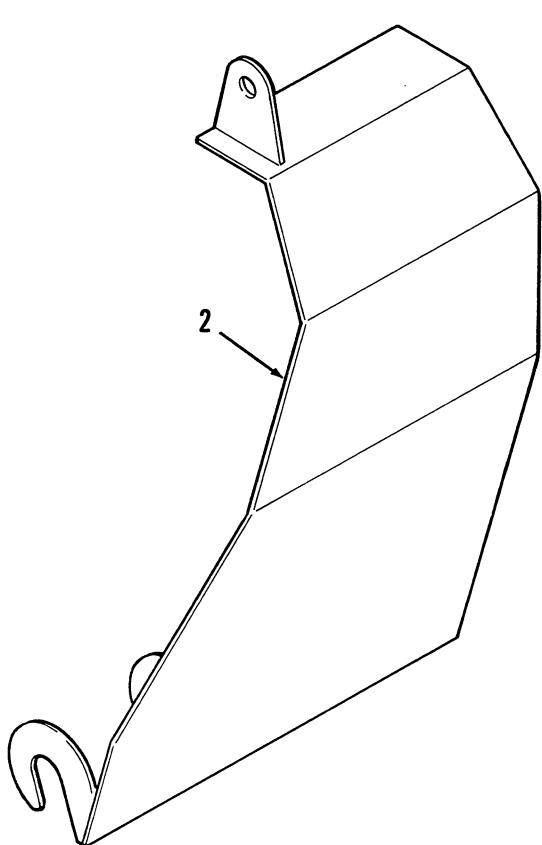


REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	130-2463	1	Support, Lower Radiator (Right Hand)
2	130-2464	1	Support, Lower Radiator (Left Hand)
3	800-2110	2	Screw, Cap - Hex Head (M12 x 20 MM)
4	800-2112	4	Screw, Cap - Hex Head (M12 x 30 MM)
5	740-1010	6	Washer, Flat (M12)
6	860-2010	4	Nut, Hex (M12)
7	850-2012	4	Washer, Lock - Spring (M12)
8	130-2838	1	Support, Upper Radiator (Right Hand)
9	130-2338	1	Support, Upper Radiator (Left Hand)
10	800-2086	2	Screw, Cap - Hex Head (M10 x 25 MM)
11	800-2071	2	Screw, Cap - Hex Head (M8 x 90 MM)

BELT GUARD (SPEC C)

Code 23AJ
Code 23BN

5100-1152

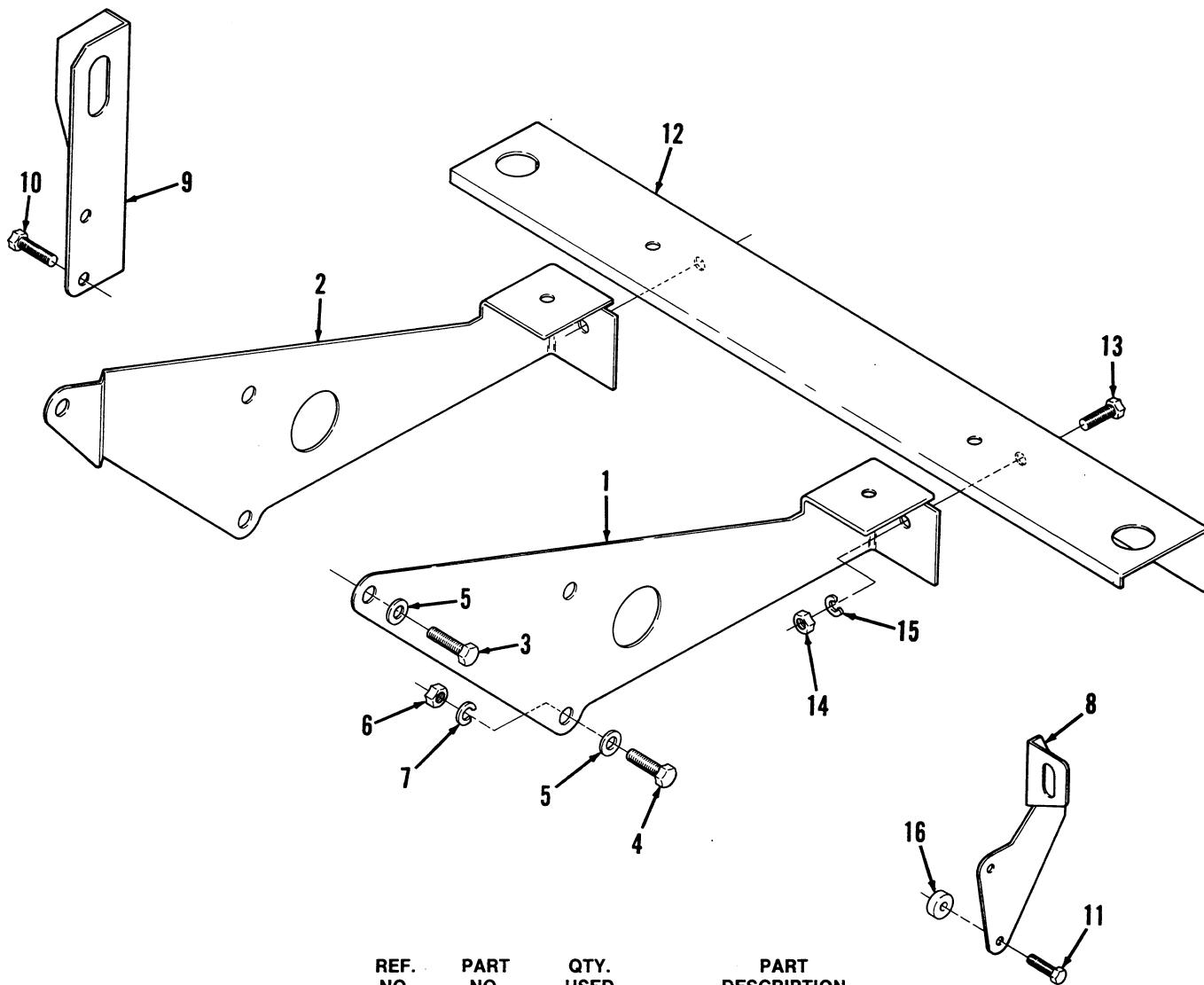


REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	130-3065	1	Guard, Belt
2	191-1741	1	Guard, Alternator
3	526-2103	5	Washer, Flat (M8)
4	800-2052	5	Screw, Cap - Hex Head (M8 x 12 MM)

RADIATOR SUPPORTS (SPEC C)

Code 23AK
Code 23BN

5100-1144

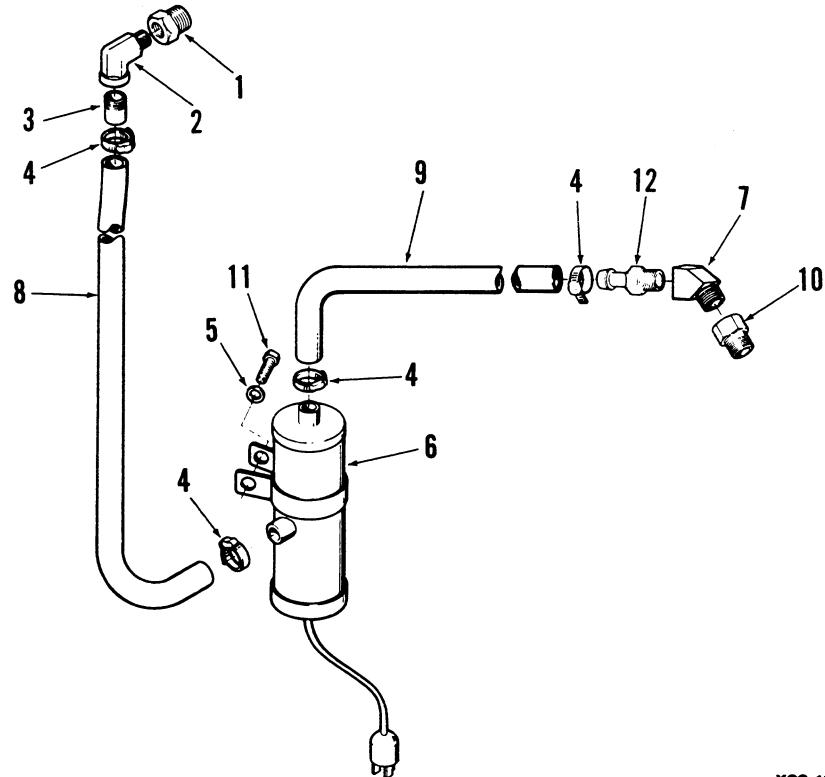


REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	130-3048	1	Support, Lower Radiator (Right Hand)
2	130-3049	1	Support, Lower Radiator (Left Hand)
3	800-2110	2	Screw, Cap - Hex Head (M12 x 20 MM)
4	800-2112	4	Screw, Cap - Hex Head (M12 x 30 MM)
5	526-2148	6	Washer, Flat (M12)
6	860-2010	4	Nut, Hex (M12)
7	850-2012	4	Washer, Lock - Spring (M12)
8	130-2838	1	Support, Upper Radiator (Right Hand)
9	130-2338	1	Support, Upper Radiator (Left Hand)
10	800-2086	2	Screw, Cap - Hex Head (M10 x 25 MM)
11	718-1807	2	Screw, Cap - Hex Head (M8 x 95 MM)
12	130-3050	1	Channel, Radiator Mounting
13	800-2057	4	Screw, Cap - Hex Head (M8 x 20 MM)
14	860-2008	4	Nut, Hex (M8)
15	526-2103	4	Washer, Flat (M8)
16	191-1322	1	Spacer

ENGINE TANK HEATER

Code 23AY (850 Watt, 120 Volt - 4 Cylinder Engines)
 (1500 Watt, 120 Volt - 6 Cylinder Engines)
Code 23BB (1000 Watt, 230 Volt - 4 Cylinder Engines)
 (1500 Watt, 230 Volt - 6 Cylinder Engines)

5100-0665

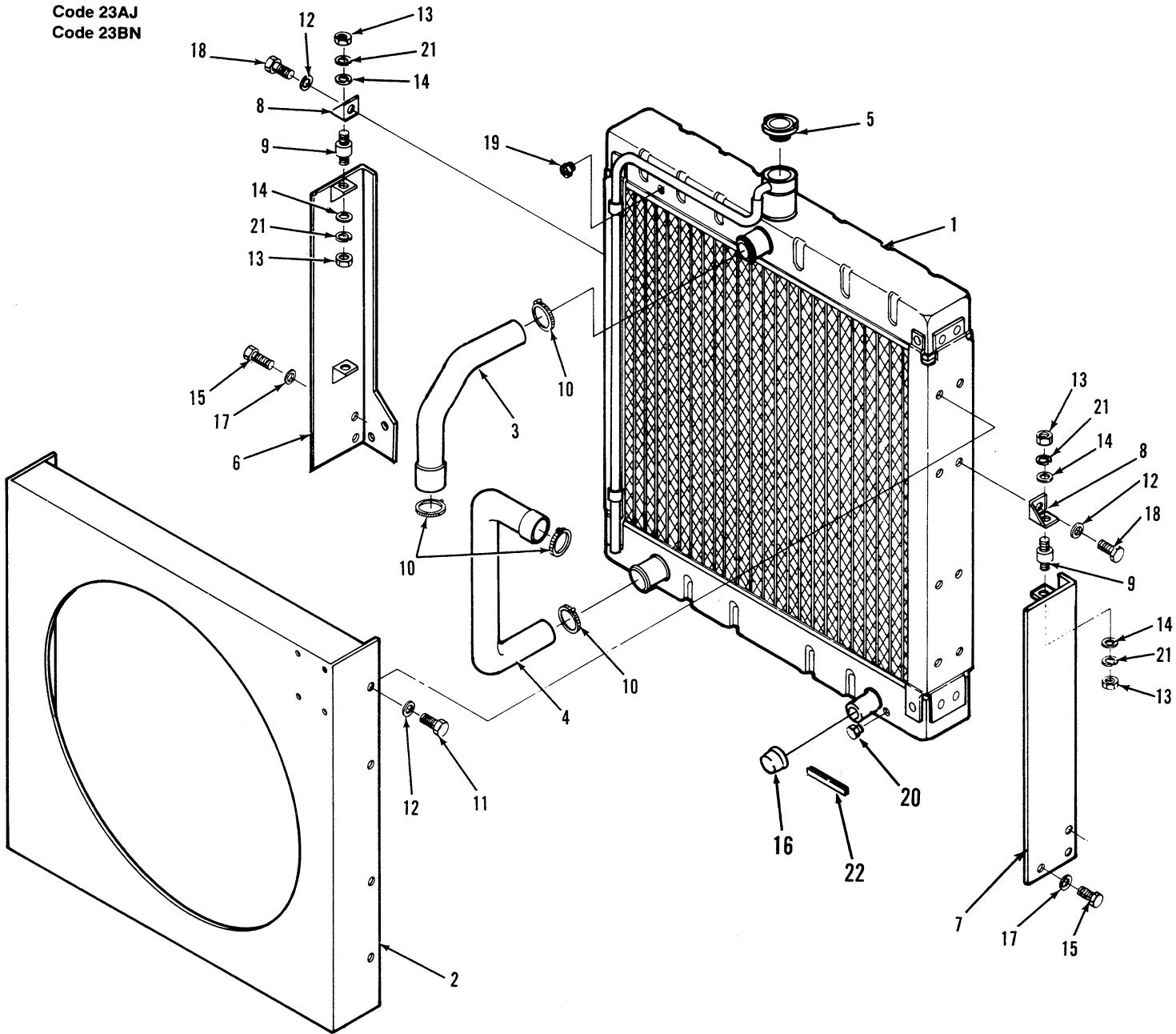


XCS-1244-1

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	505-0131	1	Bushing, Reducer (3/4" x 3/8")
2	505-0120	1	Elbow, Street (3/8")
3	505-0135	1	Nipple, Half (3/8" x 1-1/2")
4	503-0382	4	Clamp, Hose
5	850-2012	1	Washer, Lock (M12)
6	HEATER, TANK (Includes Hose Adapter, Cord and Mounting Bracket)		
			Code 23AY (120 Volt)
	333-0203	1	850 Watt - Four Cylinder Engines
	333-0204	1	1500 Watt - Six Cylinder Engines
			Code 23BB (230 Volt)
	333-0201	1	1000 Watt - Four Cylinder Engines
	333-0202	1	1500 Watt - Six Cylinder Engines
7	502-0156	1	Elbow, Street (1/4")
8	503-1168	1	Hose, Rubber (5/8" ID x 36")
9	HOSE, RUBBER		
	503-0387	1	Four Cylinder Engines (5/8" ID x 10-1/4")
	503-1429-02	1	Six Cylinder Engines (5/8" ID x 16")
10	505-0017	1	Bushing, Reducer (3/8" x 1/4")
11	718-1071	1	Screw, Cap - Hex Head (M12 x 16 MM)
12	502-0613	1	Adapter, Pipe to Hose (1/4" Pipe x 5/8" ID Hose)

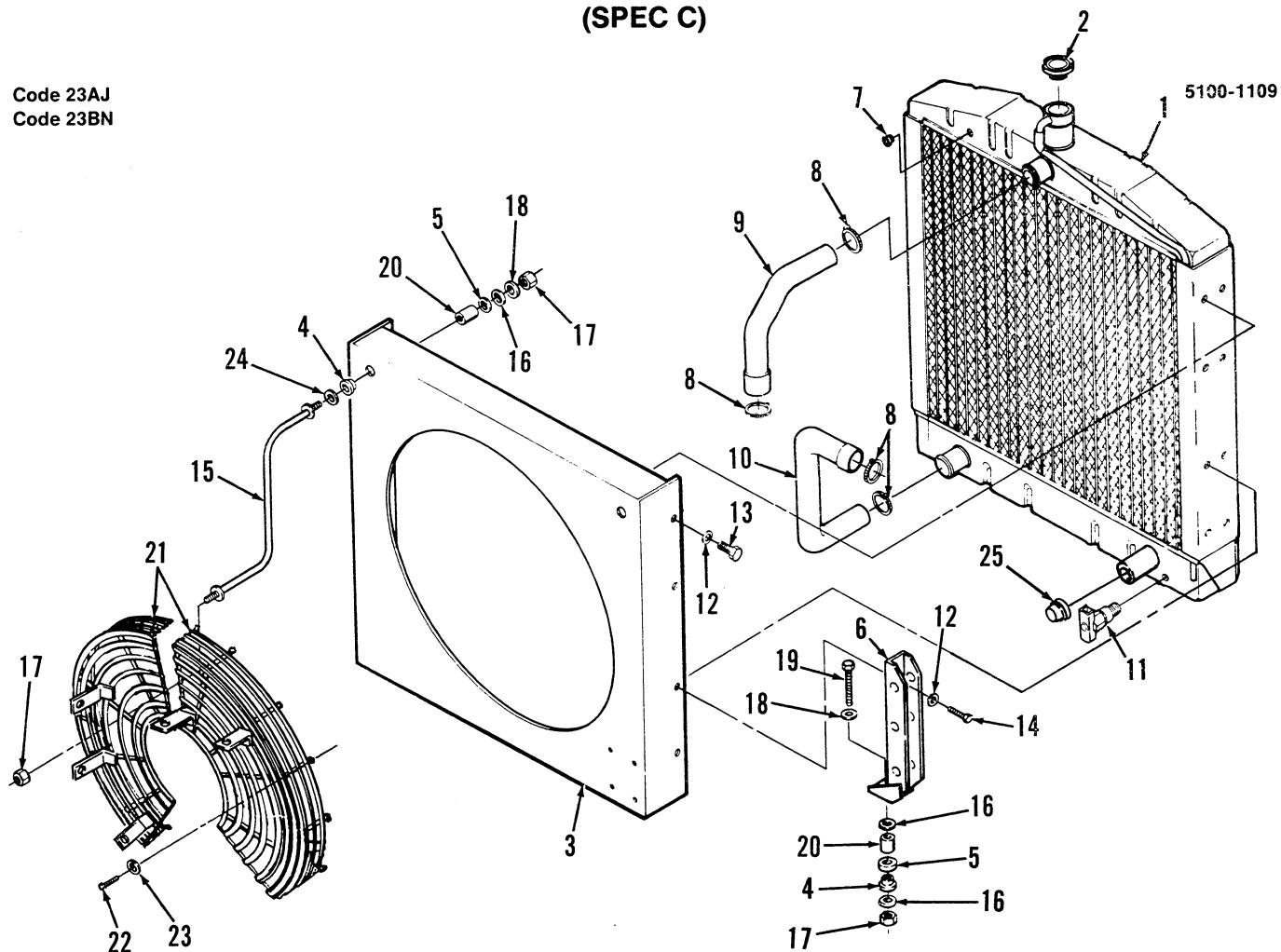
COOLING SYSTEM - RADIATOR (SPEC A)

Code 23AJ
Code 23BN



COOLING SYSTEM - RADIATOR (SPEC C)

Code 23AJ
Code 23BN

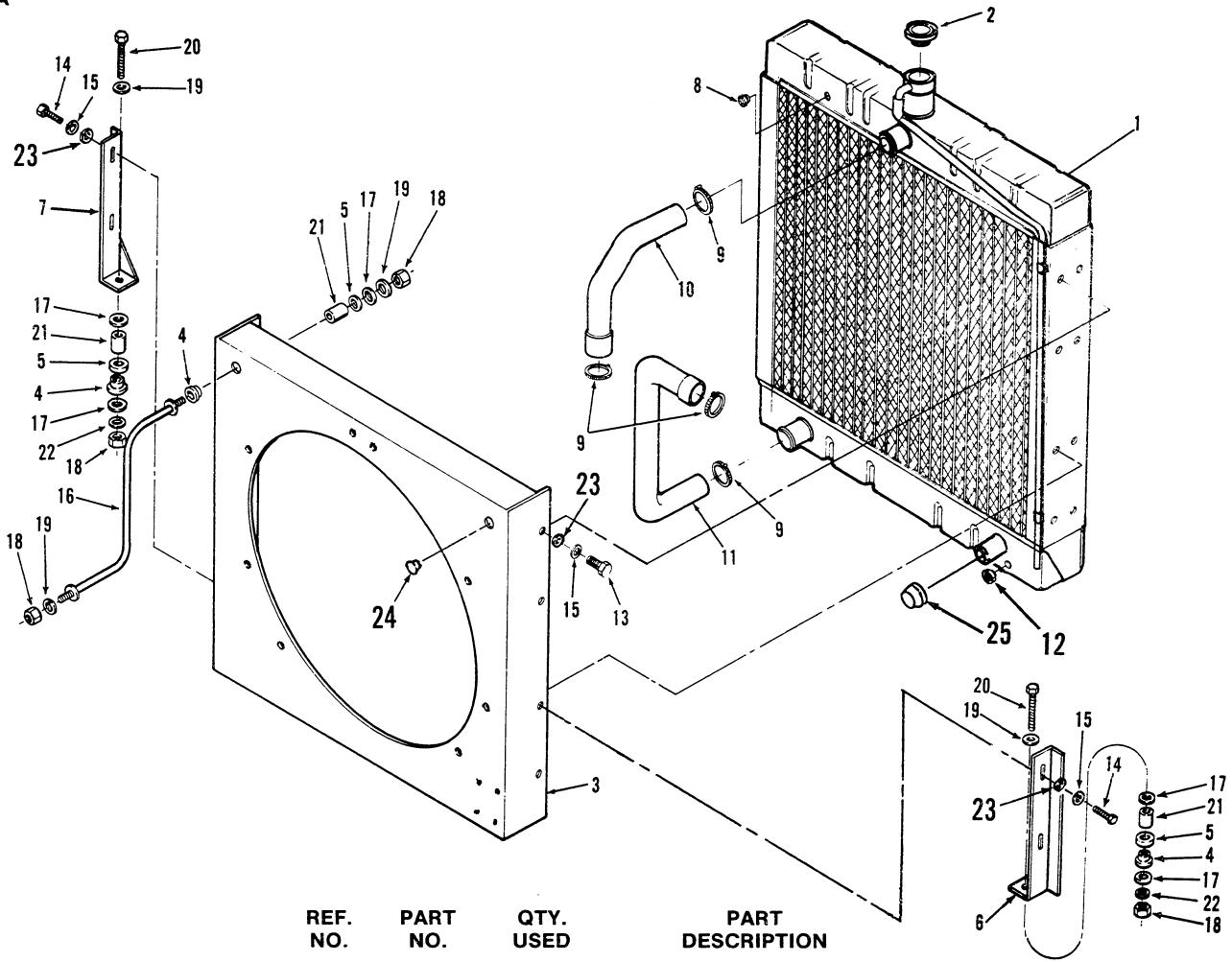


REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	130-1818	1	Radiator	16	526-0322	6	Washer, Isolator (2" O.D.)
2	130-2003	1	Cap, Pressure	17	860-2010	6	Nut, Locking (M12)
3	130-2462	1	Shroud	18	740-1010	4	Washer, Flat (M12)
4	402-0547	4	Isolator, Bushing	19	718-1079	2	Screw, Cap - Hex Head (M12 x 55 MM)
5	402-0548	4	Isolator, Ring	20	130-2458	4	Spacer, Isolator
6	130-2768	2	Support, Radiator	21	GUARD, FAN		
7	502-0153	1	Plug, Pipe (1/4")		130-3068	1	Left Hand
8	503-0365	4	Clamp, Hose		130-3067	1	Right Hand
9	503-1095	1	Hose, Radiator - Upper	22	800-2033	8	Screw, Cap - Flange Hex Head (M6 x 16 MM)
10	503-1346	1	Hose, Radiator - Lower	23	740-1004	8	Washer, Flat (M6)
11	504-0003	1	Cock, Drain	24	526-0087	2	Washer, Flat (1-17/64" ID x 1-3/4" OD x 1/16" THK)
12	740-1006	8	Washer, Flat (M8)	25	CAP, RADIATOR (Lower Hose Fitting)		
13	800-2050	4	Screw, Cap - Hex Head (M8 x 10 MM)		517-0263	1	1-1/2" ID
14	800-2054	4	Screw, Cap - Hex Head (M8 x 14 MM)		517-0264	1	1-3/4" ID
15	130-2453	2	Rod, Stabilizer				

COOLING SYSTEM - RADIATOR

Code 23 BM
Code 23CA

5100-0667



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	130-1818	1	Radiator
2	130-2003	1	Cap, Pressure
3	130-2462	1	Shroud
4	402-0547	4	Isolator, Bushing
5	402-0548	4	Isolator, Ring
6	130-2465-02	1	Support, Radiator - Right Hand
7	130-2465-01	1	Support, Radiator - Left Hand
8	502-0153	1	Plug, Pipe (1/4")
9	503-0365	4	Clamp, Hose
10	503-1095	1	Hose, Radiator - Upper
11	503-1193	1	Hose, Radiator - Lower
12	504-0003	1	Cock, Drain
13	718-1032	4	Screw, Cap - Hex Head (M8 x 10 MM)
14	718-1034	4	Screw, Cap - Hex Head (M8 x 14 MM)
15	850-2008	8	Washer, Lock-Spring (M8)
16	130-2453	2	Rod, Stabilizer
17	526-0322	6	Washer, Isolator (2" O.D.)
18	750-1010	6	Nut, Hex (M12)
19	740-1010	6	Washer, Flat (M12)
20	718-1079	2	Screw, Cap - Hex Head (M12 x 55 MM)
21	130-2458	4	Spacer, Isolator
22	850-2012	2	Washer, Lock-Spring (M12)
23	740-1006	8	Washer, Flat (M8)
24	517-0150	2	Plug, Hole (Cooling Systems Without Stabilizer Rods)
25	CAP, RADIATOR (Lower Hose Fitting) 517-0263 517-0264	1 1 1	1-1/2" ID 1-3/4" ID

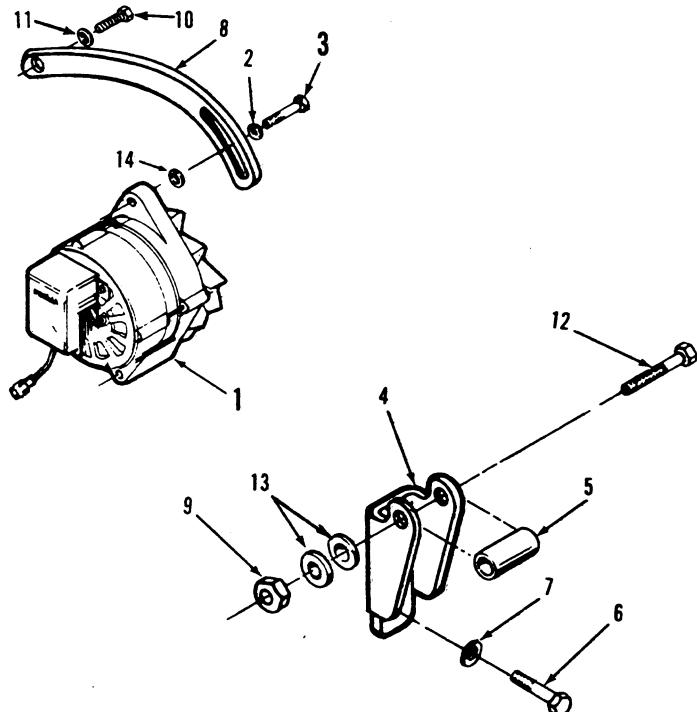
ALTERNATOR

Code 31AA (High Mount Accessory Side - 37 Amp, 12 Volt)

Code 31AB (Low Mount Accessory Side - 37 Amp, 12 Volt)

Code 31AC (High Mount Accessory Side - 62 Amp, 12 Volt)

5100-0060
5100-0061
5100-0169
5100-0229
5100-0781
5100-0782
5100-0785
5100-0786



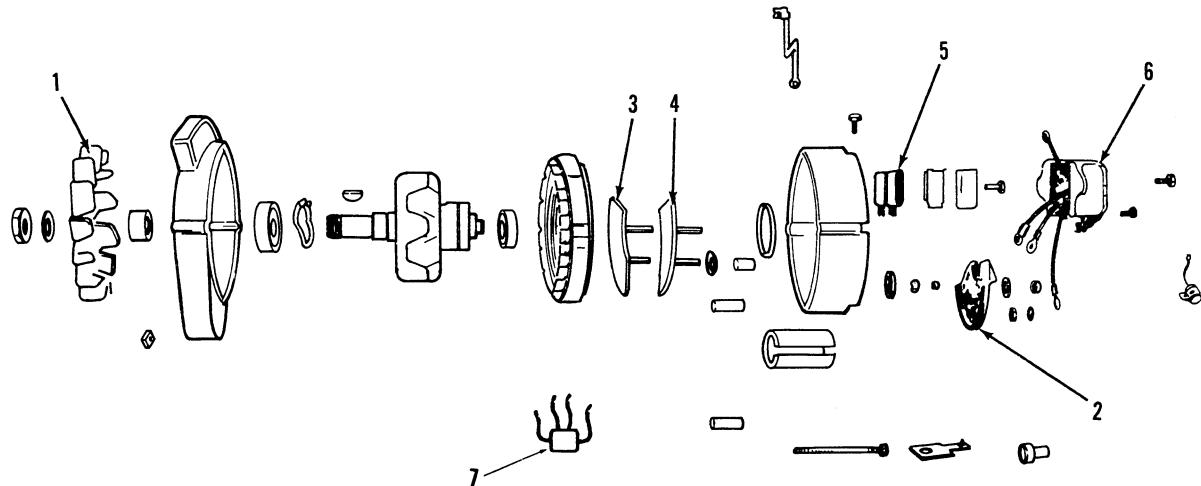
ES-1170-1

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	ALTERNATOR (Includes Fan - See Separate Group for Components)		
191-1525	Code 31AA, 31AB	1	
191-1526	Code 31AC	1	
2	526-2106	1	Washer, Flat (M8)
3	800-2058	1	Screw, Cap - Hex Head (M8 x 25MM)
4	BRACKET, ALTERNATOR MOUNTING		
191-1332	Code 31AB	1	
191-1331	Code 31AA, 31AC	1	
5	191-1321	1	Spacer, Alternator Bracket
6	718-1037	4	Screw, Cap - Hex Head (M8 x 25 MM)
7	740-1006	4	Washer, Flat (M8)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
8	STRAP, ALTERNATOR ADJUSTING		
191-1312	Code 31AB	1	
191-1365	Code 31AA, 31AC	1	
9	860-2009	1	Nut, Hex (M10)
10	718-1036	1	Screw, Cap - Hex Head (M8 x 20 MM)
11	740-1006	1	Washer, Flat (M8)
12	800-2100	1	Screw, Cap - Hex Head (M10 x 100 MM)
13	526-2123	2	Washer, Flat (M10)
14	191-1322	1	Spacer, Alternator Strap

ALTERNATOR COMPONENTS

Code 31AA (High Mount Accessory Side - 37 Amp - 12 Volt)
 Code 31AB (Low Mount Accessory Side - 37 Amp - 12 Volt)
 Code 31AC (High Mount Accessory Side - 62 Amp - 12 Volt)



ES-1292

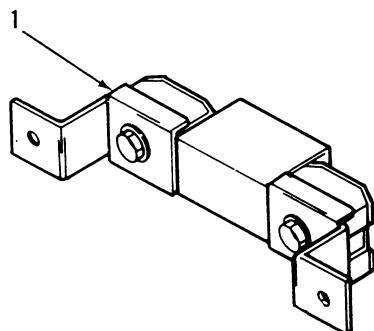
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
ALTERNATOR - Complete			
	191-1525	1	Code 31AA, 31AB - Used on Late Models - Has No Isolation Diodes on Back Side of Alternator (Replaces Early Models With Isolation Diode Assembly on Back Side of Alternator)
1	191-1526	1	Code 31AC
2	191-0943	1	Fan, Alternator
2	191-1454	1	Diode Assembly, Isolation - Used on Early Models
3 DIODE, RECTIFIER - NEGATIVE			
	191-1453	1	Used on Early Models With Isolation Diode Assembly
	191-1560	1	Used on Late Models Without Isolation Diode Assembly

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
4	DIODE, RECTIFIER - POSITIVE		
	191-1452	1	Used on Early Models with Isolation Diode Assembly
	191-1559	1	Used on Late Models without Isolation Diode Assembly
5	BRUSH ASSEMBLY		
	191-0659	1	Used on Early Models with Isolation Diode Assembly
	191-1558	1	Used on Late Models without Isolation Diode Assembly
6	REGULATOR, VOLTAGE		
	191-1457	1	Used on Early Models with Isolation Diode Assembly
	191-1557	1	Used on Late Models without Isolation Diode Assembly
7	191-1556	1	Diode, Trio - Used on Late Models without Isolation Diode Assembly

BALLAST RESISTOR

Code 33AP

5100-0317



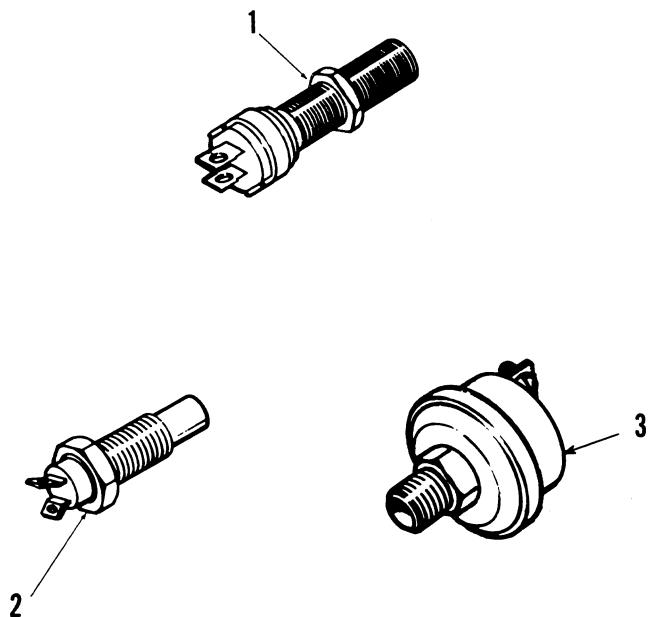
M-1345-1

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	RESISTOR, BALLAST 333-0198 333-0234	1 1	12 Volt 24 Volt

SWITCHES

Code 35AC (Low Oil Pressure Switch and High Water Temperature Switch)
Code 35AE (Speed Sensor - Magnetic)

5100-0261
5100-0340



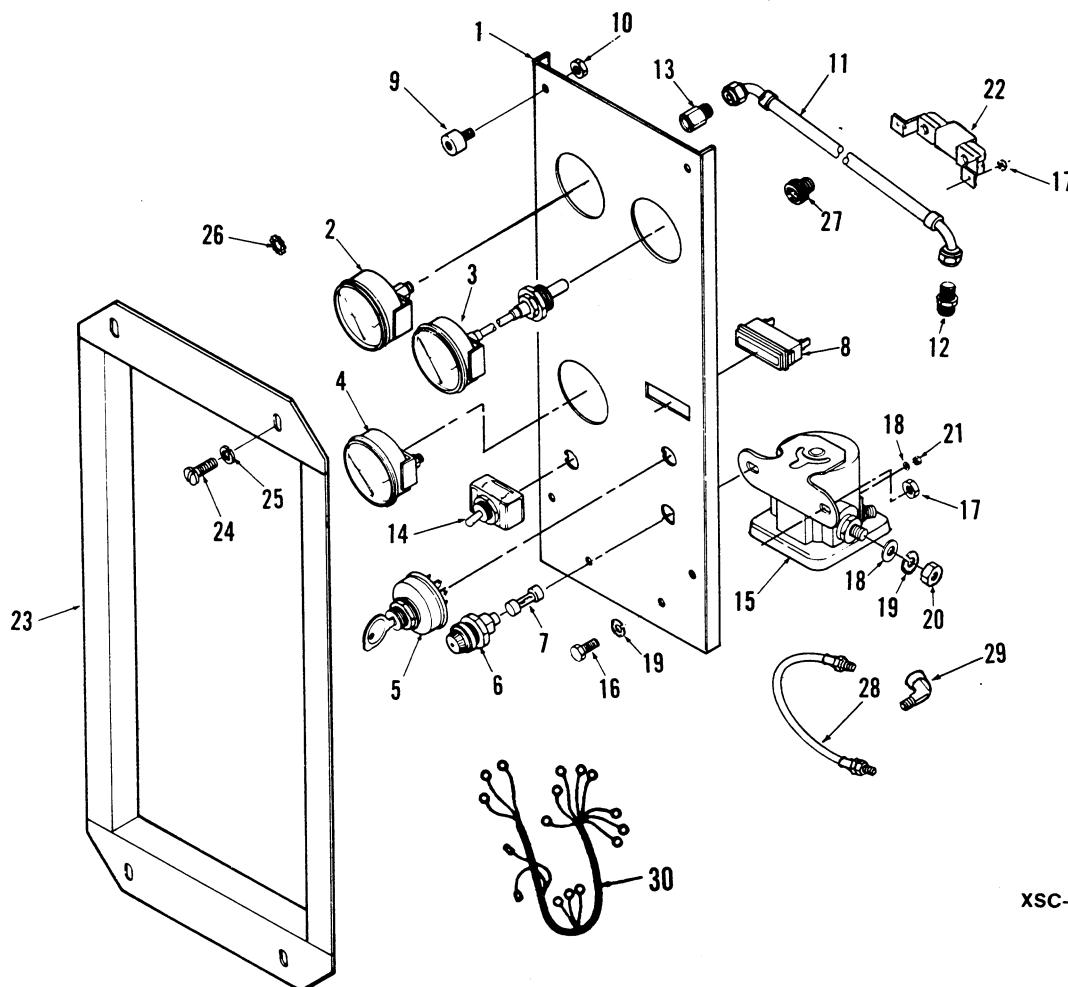
M-1489

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	150-1925	1	Sensor, Speed - Magnetic - Code 35AE
2	309-0482	1	Switch, High Water Temperature - Code 35AC
3	309-0177	1	Switch, Low Oil Pressure - Code 35AC

CONTROL - POWER UNIT

Code 35AD

5100-0201



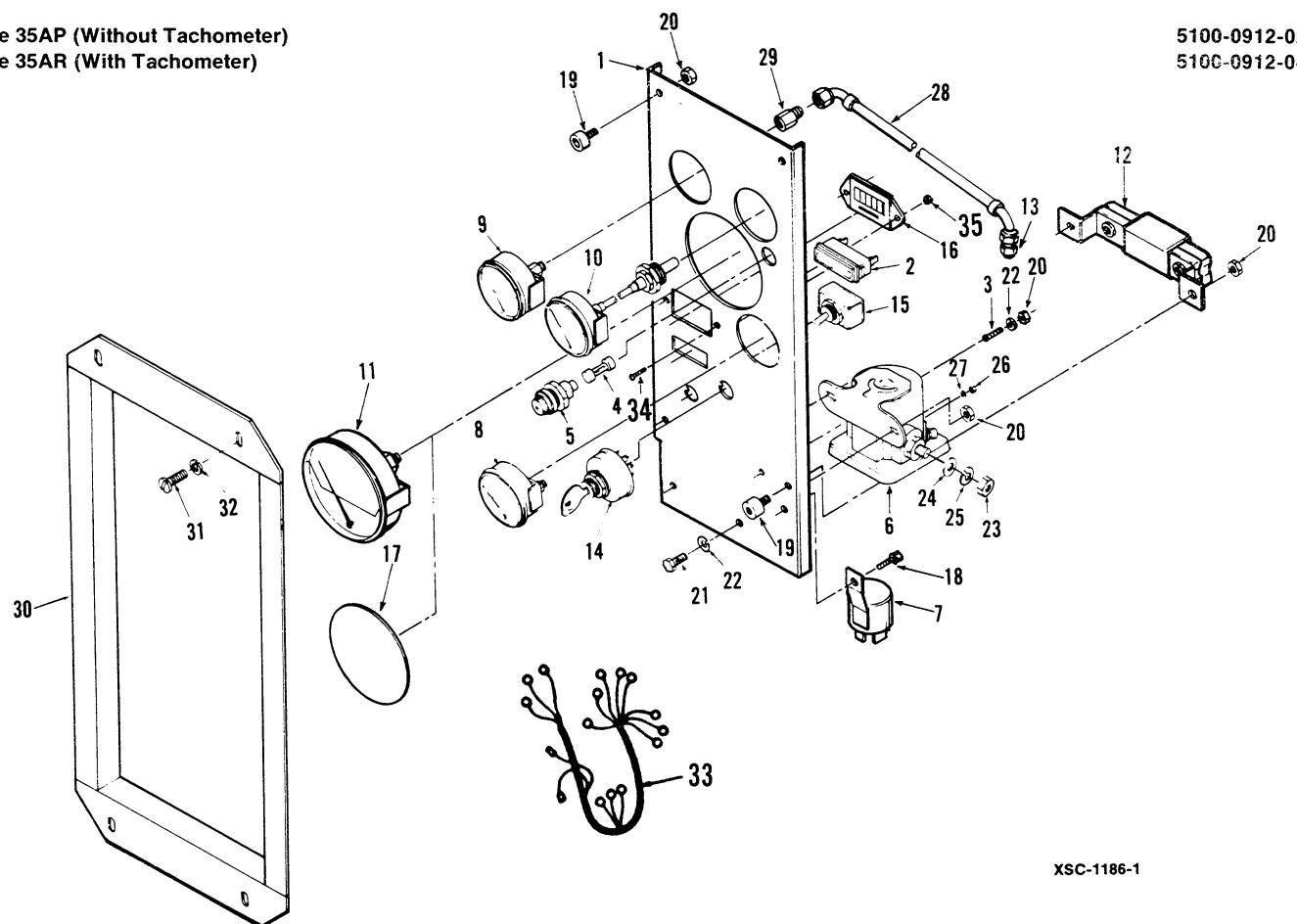
XSC-1186

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	301-6710	1	Panel, Control	19	WASHER, LOCK - SPRING		
2	193-0323	1	Gauge, Oil Pressure	850-0045		2	5/16"
3	193-0324	1	Gauge, Water Temperature	850-2006		2	M6
4	302-0063	1	Ammeter (Includes Mounting Hardware)	20	868-0002	2	Nut, Jam (5/16 - 24)
5	308-0385	1	Switch (Includes Key)	21	870-0131	1	Nut, Hex W/ET (#10-32)
6	321-0175	1	Holder, Fuse	22	RESISTOR, BALLAST		
7	321-0254	1	Fuse	333-0199		1	Four Cylinder Engines
8	322-0302	1	Light, Indicator	333-0198		1	Six Cylinder Engines
9	402-0507	4	Isolator, Vibration	23	301-6709	1	Frame, Control Panel
10	750-1004	4	Nut, Hex (M6)	24	718-1017	4	Screw, Cap - Hex Head (M6 x 10 MM)
11	501-0438	1	Line, Oil Pressure	25	850-2006	4	Washer, Lock - Spring (M6)
12	502-0807	1	Nipple, Hose Adapter	26	856-0008	2	Washer, Lock - EIT (5/16") - Ground to Rear Housing
13	502-0808	1	Nipple, Hose Adapter	27	505-0131	1	Bushing, Reducer (3/4 to 3/8")
14	308-0155	1	Switch, Toggle	28	501-0002	1	Line, Flexible Fuel - Transfer Pump
15	307-1031	1	Relay, Solenoid	29	ELBOW		
16	718-1018	2	Screw, Cap - Hex Head (M6 x 12 MM)	502-0041		1	Inverted Male - Transfer Pump
17	750-1004	2	Nut, Hex (M6)	502-0053		1	Street Pipe - Injection Pump
18	WASHER, FLAT	2	5/16"	30	338-1554	1	Harness, Wiring
526-0022		2					
526-0008		1	#10				

CONTROL - POWER UNIT

Code 35AP (Without Tachometer)
Code 35AR (With Tachometer)

5100-0912-02
5100-0912-04



XSC-1186-1

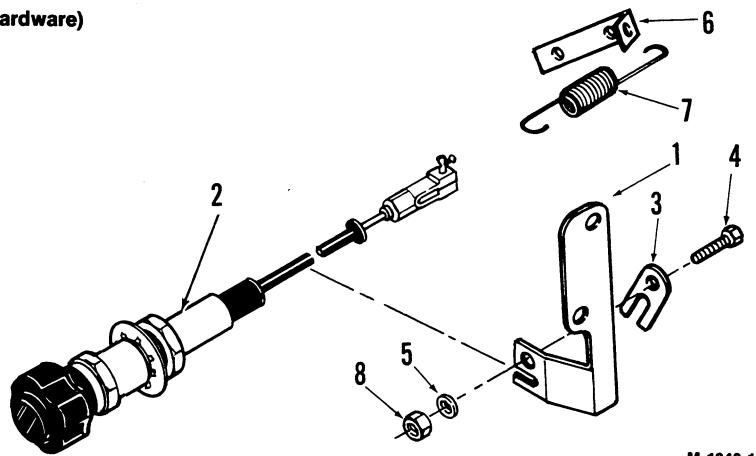
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	301-8990	1	*Panel, Control	18	718-1002	1	Screw, Locking Head (M5 x 8 MM)
2	322-0302	1	Light, Indicator	19	402-0507	4	Isolator, Vibration
3	718-1021	1	Screw, Cap - Hex Head (M6 x 20 MM) Grounding Stud	20	750-1004	7	Nut, Hex (M6)
4	321-0254	1	Fuse	21	718-1018	2	Screw, Cap - Hex Head (M6 x 12 MM)
5	321-0175	1	Holder, Fuse	22	850-2006	3	Washer, Lock-Spring (M6)
6	307-1031	1	Relay, Solenoid (Start) (Includes Terminal Hardware)	23	868-0002	2	Nut, Hex - Jam (5/16-24)
7	307-1886	1	Relay (Shutdown)	24	526-0022	2	Washer, Flat (5/16")
8	302-0063	1	Ammeter (Includes Mounting Hardware)	25	850-0045	2	Washer, Lock-Spring (5/16")
9	GAUGE, OIL PRESSURE			26	870-0131	1	Nut, Hex - ET (#10-32)
	193-0378	1	Spec A	27	526-0008	1	Washer, Flat (#10)
	193-0394	1	Spec C	28	501-0438	1	Line, Oil Pressure
10	GAUGE, WATER TEMPERATURE	(Includes 3/8-18 Hex Reducer)		29	502-0808	1	Nipple, Hose Adapter (Female)
	193-0377	1	Spec A	30	301-6709	1	*Frame, Control Panel (Not required on all engines)
	193-0393	1	Spec C	31	800-2027	4	Screw, Cap - Hex Head (M6 x 10 MM)
11	302-1719	1	Tachometer (Includes Mounting Hardware) Code 35AR	32	850-2006	4	Washer, Lock-Spring (M6)
12	RESISTOR, BALLAST			33	HARNESS, WIRING		
	333-0199	1	Four Cylinder Engines	338-1813-02		1	Engines Without Tachometer
	333-0198	1	Six Cylinder Engines	338-1813-01		1	Engines With Tachometer
13	502-0807	1	Nipple, Hose Adapter (Male)	34	812-0061	2	Screw, Machine - Round Head (#6-32 x 3/8")
14	308-0385	1	Switch (Includes Keys)	35	870-1183	2	Nut, Hex - With ET (#6-32)
15	308-0792	1	Switch, Toggie				
16	302-0885	1	Meter, Time Totalizing				
17	517-0190	1	Plug, Hole - Code 35AP				

NOTE: Control Panel width was increased 12.0 MM to 144.0 MM
eliminating the need for the Control Panel Frame. This
change occurred during Spec A.

THROTTLE CONTROL

Code 39AA (Without Mounting Hardware)
Code 39AA (With Mounting Hardware)

5100-1098
5300-0019



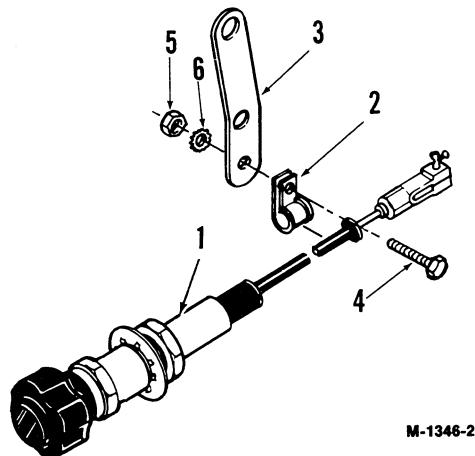
M-1346-1

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	152-0251	1	Bracket, Cable
2	CABLE, SPEED ADJUSTING		
	152-0242	1	Without Mounting Hardware (23-3/4")
	152-0254	1	With Mounting Hardware (25-3/4")
3	152-0253	1	Clamp, Cable
4	800-2033	1	Screw, Cap - Hex Head (M6 x 16 MM)
5	850-2006	1	Washer, Lock - Spring (M6)
6	150-2144	1	Bracket, Spring
7	150-2056	1	Spring, Accelerator Return
8	860-2007	1	Nut, Hex (M6)

THROTTLE CONTROL

Code 39AD (With Mounting Hardware)

5100-0853



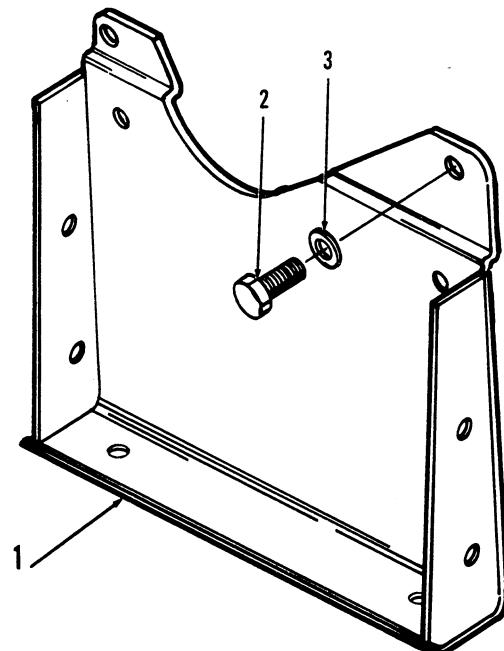
M-1346-2

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	152-0246	1	Control, Vernier (64")
2	518-0454	2	Clamp, Mounting
3	150-2061	2	Bracket, Mounting
4	718-1003	2	Screw, Cap - Hex Head (M5 x 10 MM)
5	750-1002	2	Nut, Hex (M5)
6	853-2005	2	Washer, Lock - ET (M5)

FRONT ENGINE MOUNT

Code 41AB (Rigid Four Point)

5100-0197



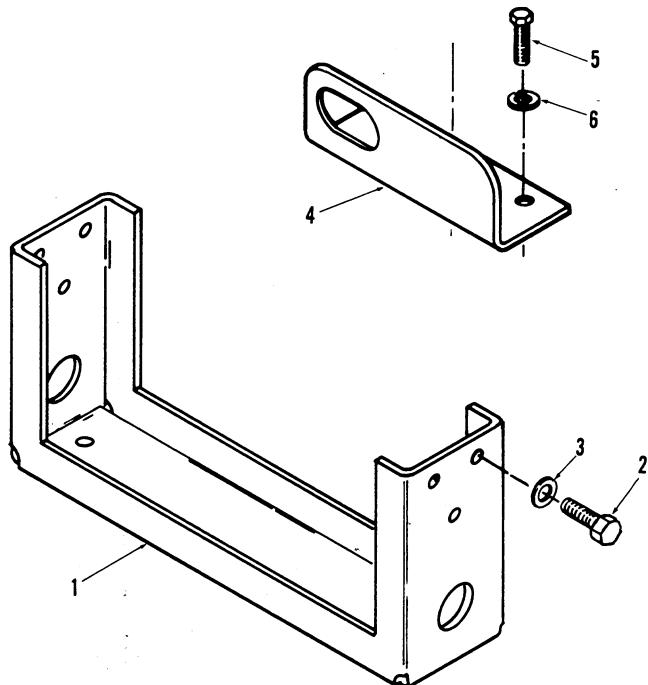
M-1224

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	403-2033	1	Bracket, Mount
2	SCREW, CAP - HEX HEAD 718-1086 718-1802	2	M12 x 90 MM M12 x 95 MM
3	740-1010	4	Washer, Flat (M12)

REAR ENGINE MOUNT AND LIFTING BRACKET

Code 41AB (Rigid Four Point)

5100-0198
5100-0199
5100-0207
5100-0311



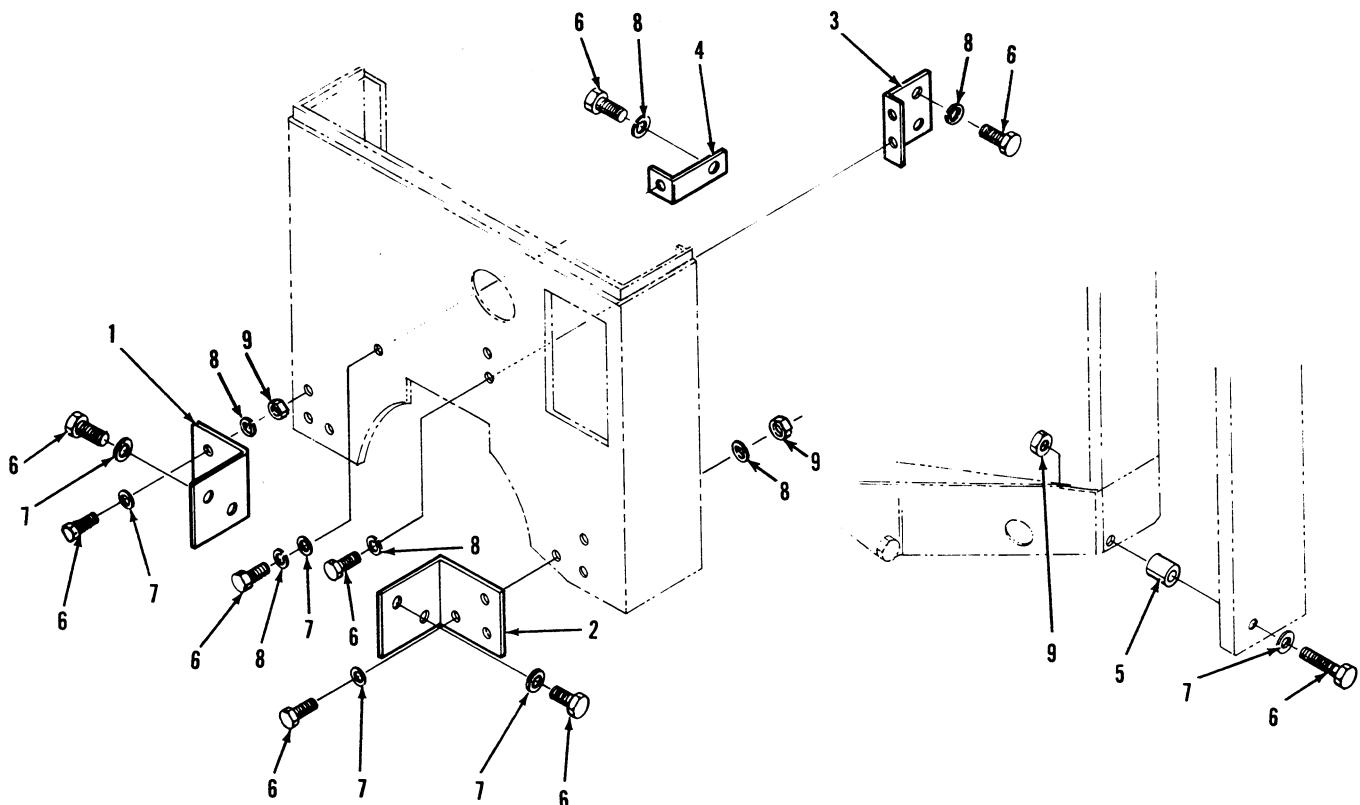
M-1224

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	BRACKET, REAR HOUSING 403-2036	1	For Engines With SAE #3 Flywheel Housing (Code 27AC, 27AG)
	403-1973	1	For Engines With SAE #4 Flywheel Housing (Code 27AB, 27AF, 27AH)
	403-1952	1	For Engines With SAE #5 Flywheel Housing (Code 27AA, 27AE)
2	718-1073	6	Screw, Cap - Hex Head (M12 x 25 MM)
3	850-2012	6	Washer, Lock-Spring (M12)
4	403-1937	1	Bracket, Lifting - Unhoused Engines
5	718-1053	2	Screw, Cap - Hex Head (M10 x 20 MM) - Unhoused Engines
6	850-2010	2	Washer, Lock-Spring (M10) - Unhoused Engines

HOUSING MOUNTING HARDWARE

Code 43AA
Code 43AB

5500-0013



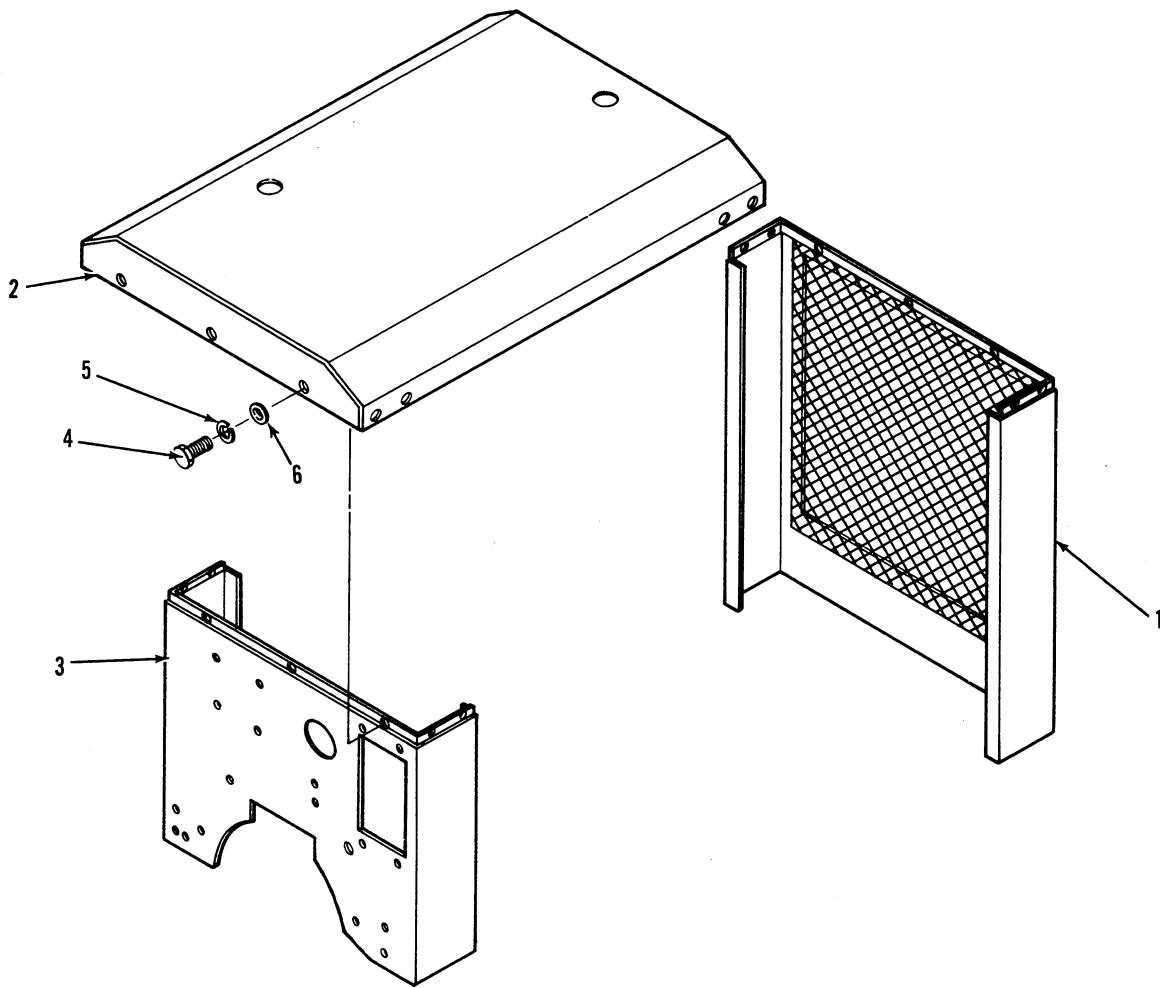
M-1340

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	405-2917	1	Bracket, Rear Housing (RH)
2	405-2918	1	Bracket, Rear, Housing (LH)
3	405-2877	1	Bracket, Rear Housing
4	405-2878	1	Bracket, Rear Housing
5	405-2886	2	Spacer
6	SCREW, CAP - HEX HEAD 718-1073 718-1035 718-1037 718-1041 718-1052 718-1071	4 3 8 2 2 1	M12 x 25 MM M8 x 16 MM M8 x 25 MM M8 x 45 MM M10 x 16 MM M12 x 16 MM
7	WASHER, FLAT 740-1010 740-1006	4 6	M12 M8
8	WASHER, LOCK 850-2008 850-2010 850-2012	13 2 1	M8 M10 M12
9	750-1006	6	Nut, Hex (M8) (Not required on all engines)

HOUSING (SPEC A)

Code 43AA
Code 43AB

5500-0051



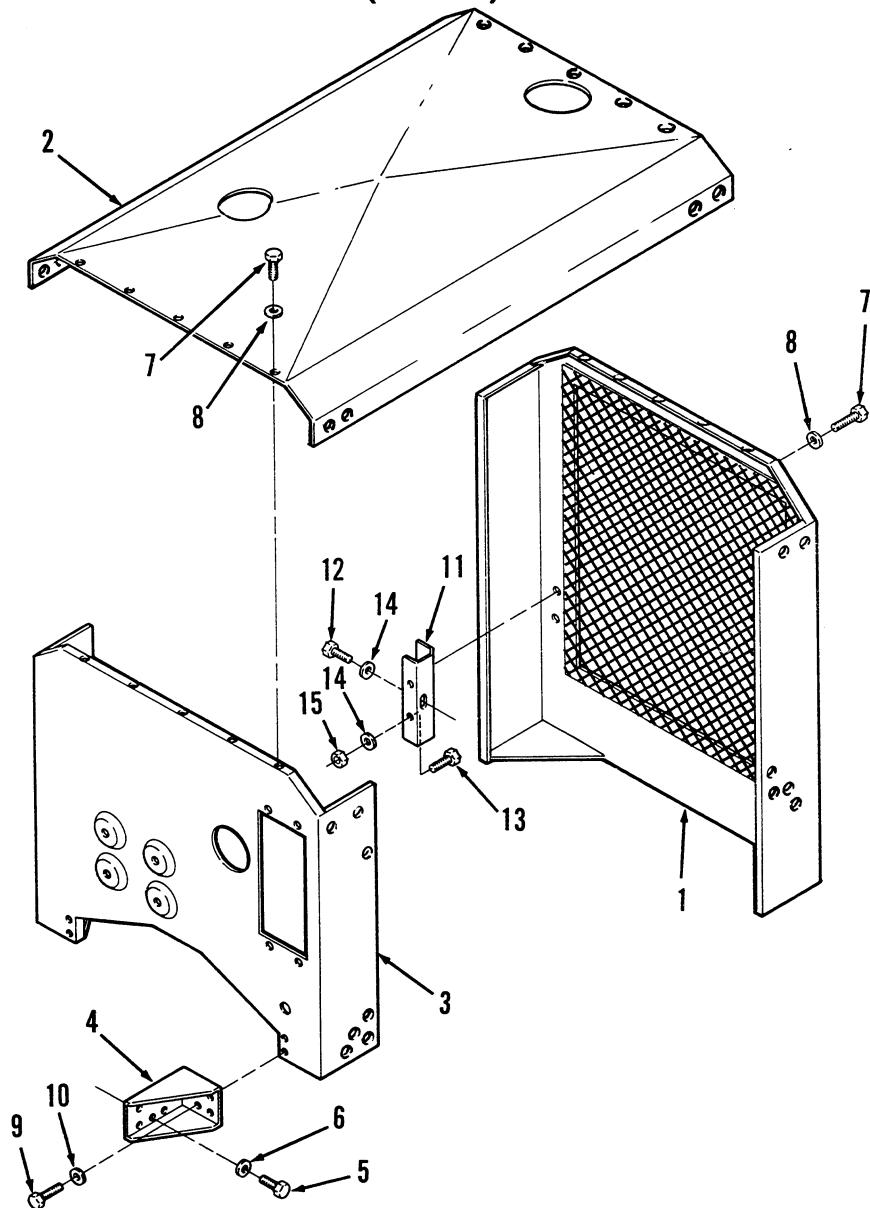
M-1342

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	405-2924	1	Housing, Radiator
2	405-2925	1	Roof, Housing
3	405-3195	1	Housing, Rear
4	718-1018	14	Screw, Cap - Hex Head (M6 x 12 MM)
5	850-2006	14	Washer, Lock - Spring (M6)
6	526-2081	14	Washer, Flat (M6)

HOUSING (SPEC C)

Code 43AA

5500-0055

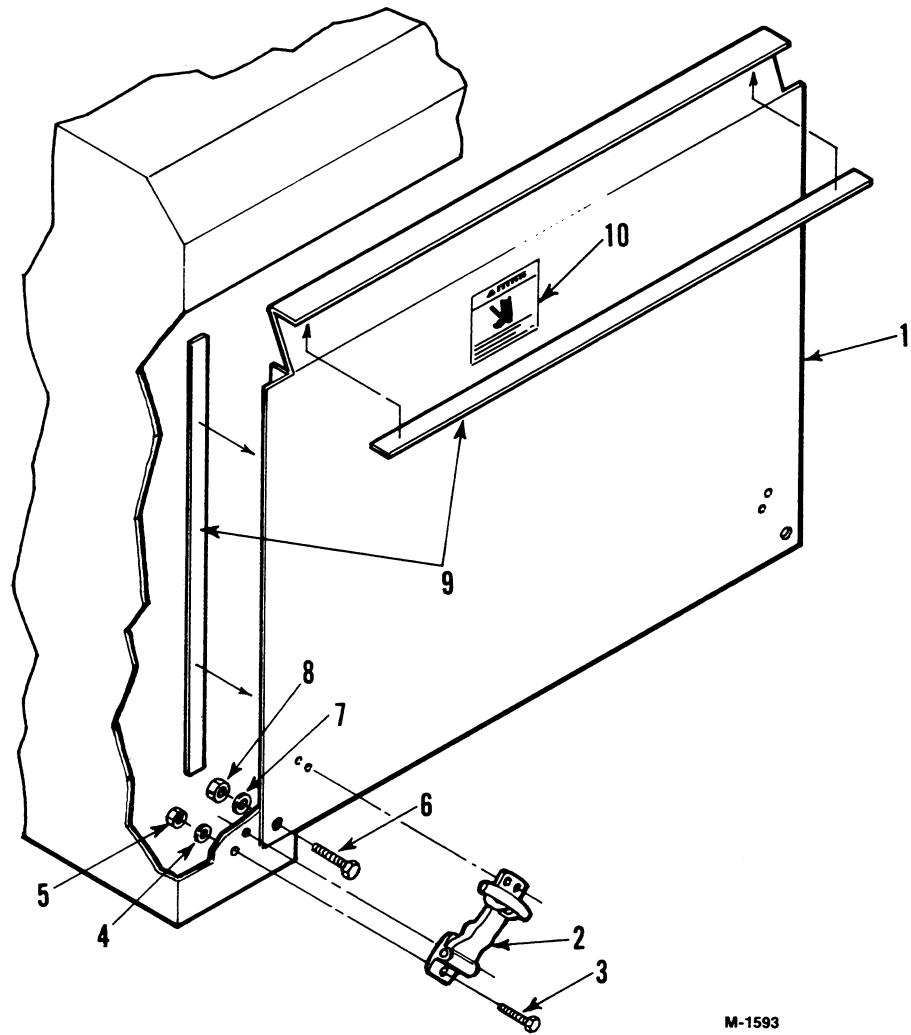


REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	405-3788	1	Housing, Radiator
2	405-3381	1	Roof, Housing
3	405-3570	1	Housing, Rear
4	405-3599	2	Bracket, Rear Housing
5	800-2111	4	Screw, Cap - Hex Head (M12 x 25 MM)
6	526-2148	4	Washer, Flat (M12)
7	800-2052	22	Screw, Cap - Hex Head (M8 x 12 MM)
8	526-2108	22	Washer, Flat (M8)
9	800-2085	4	Screw, Cap - Hex Head (M10 x 20 MM)
10	526-2123	8	Washer, Flat (M10)
11	405-3786	2	Bracket, Housing Support
12	800-2052	2	Screw, Cap - Hex Head (M8 x 12 MM)
13	800-2057	4	Screw, Cap - Hex Head (M8 x 20 MM)
14	526-2103	6	Washer, Flat (M8)
15	860-2008	4	Nut, Hex (M8)

LOCKABLE DOORS - SPEC A

Code 43AB (Lockable Doors)
Code 43AE (Lockable Door, Accessory Side)

5100-0705
5100-1119



M-1593

NOTE: These lockable doors **MUST** be used
with a blower type cooling fan.

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	DOOR 405-3308 405-3308	2 1	Code 43AB Code 43AE
2	406-0562	2	Latch, Door (Includes Keeper)
3	718-1004	8	Screw, Cap - Hex Head (M5 x 12 MM)
4	740-1002	8	Washer, Flat (M5)
5	750-1002	8	Nut, Hex (M5)
6	718-1036	2	Screw, Cap - Hex Head (M8 x 20 MM) Code 43AB
7	740-1006	6	Washer, Flat (M8) Code 43AB
8	750-1006	2	Nut, Hex (M8) Code 43AB
9	GASKET, DOOR (1829 MM) 405-3339 405-3339	2 1	Code 43AB Code 43AE
10	LABEL, CAUTION 98-5333 98-5333	2 1	Code 43AB Code 43AE

MODEL SPECIFICATION NUMBER TO OPTION CODE TABLE

The front of this parts manual states that an option code identification plate is attached to each engine. This plate lists all option codes used to manufacture and service the engine. Early production engines have been manufactured and shipped less this plate leaving no proper identification of component parts, Sales Option Codes for Power Units are combined with Sales Option Codes that apply to the Industrial Engine portion. Using the specification number from your engine nameplate determine the option codes that apply to your engine.

Spec No. 10008 10011 10012 10016 10017 10021 10022 10023 10027 10028 10038 10039 10040 10041 10042 10043 10051 10052 10053 10054																										
PU													PU													
OPTION	11AA	11AA	11AA	11AB	11AB	11AC	11AA	11AA	11AB	11AB	11AB	11AB	11AA	11AB	11AB	11AB	11AB	11AB	11AB	11AA	11AA	11AB	11AB	11AB	11AB	
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	21AA	19AB	19AB	21AA	19AB	19AB	21AA																			
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	23AH	21AD	21AD	23AG	23AG	23AM	23BA	23BA	23AF	23AG	23AG	23BA	23BA	23BA	21AD	21AD	23BJ	23AG	23AF	23AF	23AG	23AG	23AG	23AG	23AG	
	23BA	23AA	23AA	33AD	23AH	27AD	27AB	31AA	31AG	33AD	27AA	27AB	27AB	23AA	23AA	27AF	27AA	27AA	27AB							
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	33AD	31AA	31AA		33AD						45AB			31AA	31AA	41AA										
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	33AN	33AN														33AN	33AN									
	41AB	39AA														41AB	35AD									
	41AB																39AA									
	43AA																41AB									
																	43AA									

SPEC NO.	10055	10056	10063	10066	10067	10068	10070	10074	10077	10078	10081	10089	10090	10092	10093	10096	10097	10098	10100
	PU																		
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	39AA									35AD									
	41AB									39AA									
	43AA									41AB									
										43AA									

SPEC NO.	10101	10103	10105	10106	10114	10118	10119	10120	10125	10126	10133	10134	10139	10140	10141	10142	10144	10145	10171
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SPEC NO.	10286	10300	10304	10306	10307	10308 PU	10316	10319	10320 PU	10321	10322 PU	10337 PU	10341	10342 PU	10345	10352	10353 PU	10362	10371
OPTION	11AA	11AA	11AB	11AC	11AC	11AC	11AB	11AA	11AA	11AC	11AC	11AB	11AB	11AB	11AC	11AC	11AC	11AC	11AE
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	19AA	19AA	19AA	19AA	19AA	19AA	19AA	19AA	19AA	19AA	19AA	19AA	19AA	19AA	17AM	19AA	19AA	19AA	19AA
NUMBERS	21AB	21AA	21AA	23AB	21AA	19AB	21AA	21AA	19AB	21AA	19AB	21AA	19AC	19AA	21AA	19AB	19AB	19AB	23AB
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	23BH	23AF	23BJ	23CB	23BA	21AD	23AG	23BA	21AD	23BA	21AA	21AD	23BA	21AD	21AG	23BE	21AG	21AG	23CB
	27AL	27AF	27AF	29AT	27AB	23AA	27AF	27AF	23AA	27AG	21AD	23AA	27AF	23AA	23AC	23CE	23AA	23AA	23CD
	29AP	29AD	29AD	31AH	29AD	23AJ	29AD	29AD	23BA	29AG	23AA	23BA	29AD	23BA	23AG	27AF	23BE	23BE	27AF
CODE	31AE	31AA	31AA	33AA	31AG	23BA	31AA	31AG	23CA	31AG	23BA	23CA	31AG	23BN	27AF	29AD	23BM	23CE	29AK
	31AG	31AG	31AG	33AG	33AA	27AB	31AG	33AA	27AF	33AA	23BN	27AF	33AA	27AF	29AD	31AB	23CE	27AF	31AA
	33AA	33AA	33AA	35AJ	33AN	29AD	33AA	33AD	29AD	33AN	27AG	29AD	33AN	29AD	31AA	31AG	27AF	29AD	31AG
	33AE	33AD	33AD		35AJ	31AA	33AD	35AJ	31AB	35AJ	29AG	31AB	35AJ	31AC	31AG	33AA	29AD	31AB	33AA
	35AJ	35AJ	35AJ			31AG	35AJ		31AG		31AA	31AG	45AA	31AG	33AA	33AR	31AB	31AG	33AE
NUMBERS	45AT					33AA			33AA		31AG	33AA		33AA	33AD	35AJ	31AG	33AA	35AJ
						33AN			33AD		33AA	33AN		33AN	35AJ		33AA	33AR	
						35AD			35AE		33AN	35AE		35AD		33AR	35AJ		
						35AJ			35AJ		35AD	35AJ		35AJ		35AJ	41AH		
						41AB			35AR		35AJ	35AR		39AA		41AB		41AB	
CODE						43AA			39AA		41AB	39AA		41AB		43AB	41AB	43AB	
																		43AA	
																			45AA

SPEC NO.	10385	10386	10391	10392	10402	10403	10404	10405 PU	10406 PU	10407 PU	10408 PU	10418	10419 PU	10428	10429 PU	10431 PU	10443	10444	10453	
OPTION	11AC	11AC	11AE	11AE	11AC	11AC	11AC	11AA	11AA	11AB	11AB	11AA	11AA	11AB	11AB	11AA	11AB	11AB	11AB	
	13AE	13AC	13AP	13AD	13AC	13AE	13AE	13AA	13AA	13AB	13AB	13AA	13AA	13AB	13AB	13AA	13AH	13AA	13AB	
	15AA	15AA	15AA	15AA	15AG	15AG	15AG	15AA	15AA	15AA	15AA	15AA	15AA	15AA	15AA	15AA	15AA	15AA	15AA	
	15AJ	15AF	15AJ	15AF	17AA	15AF	17AA	17AA	15AJ	15AJ	15AK	15AJ								
	17AA	17AJ	15AJ	17AJ	15AJ	17AA	17AA	17AJ	17AA	17AA	17AA	17AA	17AA							
CODE	17AJ	17AL	17AJ	17AL	17AJ	17AL	17AJ	17AL	17AL	17AJ	17AJ	17AJ	17AJ							
	17AM	17AP	17AL	17AP	17AL	19AA	17AL	19AA	17AL	17AM	17AL	17AL								
	17BA	17BA	17BA	17BA	19AA	19AA	19AA	17AP	19AA	17AP	19AA	17AP	21AA	19AA	21AA	19AB	19AA	19AA	19AA	
NUMBERS	19AA	19AA	19AA	19AA	23AB	23AB	23AB	19AB	19AA	19AB	19AA	19AA	23AA	19AB	23AA	21AA	21AB	21AB	21AB	
	21AA	21AA	21AA	21AA	23CB	23CB	23CB	21AA	19AB	21AA	19AB	21AA	23AL	21AA	23BA	21AD	21AA	23AA	21AA	
	23AA	23AA	23AA	23AA	23CL	23CL	23CL	23AA	21AA	23AA	21AA	23BA	21AD	27AG	23AA	21AD	23BA	23AA	23BA	
	23AW	23AW	23AW	23AW	31AG	31AG	31AH	23AF	23AA	23BJ	23AA	27AF	23AA	29AG	23AJ	23AA	27AB	23AL	27AB	
	23BP	23BP	23BP	23BJ	33AR	33AR	33AG	23BN	23AF	23BN	23BJ	29AD	23AJ	33AA	23BA	23AJ	29AD	23BH	29AD	
CODE	23CC	23CC	23CC	23CC	35AJ	35AJ	35AJ	27AF	23BN	27AF	23BN	33AA	23AL	33AN	27AG	23BA	31AC	23CZ	31AA	
	27AN	27AN	27AN	27AN				29AD	27AF	29AD	27AF	33AN	23BA		29AG	27AF	31AG	27AL	31AG	
	29AK	29AK	29AK	29AK				31AA	29AD	31AA	29AD				27AF	31AA	29AD	33AA	29AP	
	31AF	31AF	31AF	31AF				31AG	31AA	31AG	31AA				29AD	33AA	31AC	33AD	31AA	
	31AG	31AG	31AG	31AG				33AA	31AG	33AA	31AG				31AC	33AN	31AG	35AJ	31AG	
NUMBERS	33AA	33AA	33AA	33AA				33AD	33AA	33AD	33AA				33AA	33AP	33AA	33AA	45AA	
	33AR	33AR	33AR	33AR				35AJ	33AD	35AJ	33AD				33AN	41AB	33AN	33AE		
	35AJ	35AJ	35AJ	35AJ				41AB	35AJ	41AB	35AJ				35AD	35AJ	35AD	35AJ		
	41AA	41AA	41AA	41AA					35AP	35AP	35AP		39AA	41AB		35AJ	45AT			
									39AA	39AA	39AA		41AB		41AB		39AA			
CODE										41AB	41AB	41AB		43AA		43AA		43AE		

SPEC NO.	10454 PU	10468	10471	10485	10522	10545	10547	10553	10579	10580	10581	10582	10610	10612	10613 PU	10635	10637	10669	10672	10681
OPTION	11AB	11AE	11AA	11AA	11AA	11AB	11AA	11AB	11AA	11AA	11AA	11AA								
	13AB	13AP	13AA	13AA	13AA	13AB	13AA	13AB	13AA	13AA	13AA	13AA								
	15AA	15AG	15AA	15AA	15AA	15AA	15AA	15AA												
	15AJ	15AJ	15AK	15AD	15AK	15AJ	15AJ	15AK	15AK	15AD	15AK	15AK	15AK	15AK	15AK	15AK	15AJ	15AK	15AK	15AK
	17AA	17AA	17AA	15AK	17AA	17AJ	17AJ	17AA	17AA	15AK	17AA	17AA	17AA	17AJ	17AJ	17AJ	17AB	17AA	17AJ	17AJ
CODE	17AJ	17AJ	17AJ	17AA	17AJ	17AL	17AL	17AL	17AJ	17AA	17AJ	17AJ	17AJ	17AL	17AL	17AL	17AJ	17AJ	17AL	17AL
	17AL	17AM	17AL	17AJ	17AL	17AP	17AP	17AP	17AL	17AJ	17AL	17AL	17AL	17AP	17AP	17BJ	17AM	17AL	17BJ	17BJ
	19AA	19AA	19AA	17AL	19AA	19AA	19AA	19AA	19AA	17AL	19AA	19AA	19AA	19AA	19AA	19AA	19AA	19AA	19AA	19AA
NUMBERS	19AB	23AB	21AB	19AA	21AB	21AA	21AA	21AA	21AB	19AA	21AB	21AB	21AB	19AB	21AB	21AA	21AB	21AB	21AB	21AB
	21AA	23BG	23AA	21AB	23AA	23AA	23AA	23AA	23AA	21AB	21AJ	23AA	23AC	23AA	21AB	23AB	23AA	23AA	23AB	23AB
	21AD	23CB	23BH	21AG	23AL	23AF	23BJ	23AF	23BH	21AJ	23AA	23BH	23AL	23AF	23AA	23CR	23AL	23BH	23CR	23AL
	23AA	23CD	27AP	23AA	23BH	27AF	27AF	27AF	27AU	23AA	23BH	27AU	23BH	23AL	23AF	27AP	23BJ	27AL	31AE	23CR
	23AJ	27AF	29AZ	23AL	27AL	29AD	29AD	29AD	29AP	23BH	23CZ	29AP	23CZ	27AF	23AL	29AZ	27AF	29AP	31AG	27AP
	23BA	29AK	31AC	23BH	29AP	31AA	31AA	31AC	31AE	23CZ	27AU	31AE	27AL	29AD	23BN	31AE	29AD	31AC	33AR	29AZ
	27AB	31AA	31AG	23CZ	31AA	31AG	31AG	31AG	31AG	27AU	29AP	31AG	29AP	31AE	27AF	31AG	31AA	31AG	33AU	31AE
	29AD	31AG	33AA	27AL	31AG	33AA	33AA	33AA	33AA	29AP	31AA	33AA	31AA	31AH	29AD	33AA	31AG	33AA	35AJ	31AG
	31AA	33AA	33AE	29AP	33AA	33AD	33AD	33AD	33AE	31AC	31AG	33AE	31AG	33AA	31AE	33AR	33AA	33AE	41AA	33AE
	31AG	33AE	35AJ	31AC	33AE	35AJ	35AJ	35AJ	35AJ	31AG	33AA	35AJ	33AE	33AG	31AH	35AJ	33AD	35AJ	33AU	
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	35AD				33AE	45AT				35AJ	45AT		45AT		35AJ					
	35AJ									45AT					41AB					
	39AA					45AT														
	41AB																			
	43AB																			
	45AA																			

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